

Lyman®

User's Guide for Black Powder Products

This booklet contains important how-to information on the use and maintenance of black powder products and accessories including:

- Flintlock and Caplock - How They Work
- Black Powder Loads and Specifications
- Shooting Tips—Round Ball and Conicals
- Basics of Bullet Casting
- Disassembly and Cleaning

The User's Guide also includes detailed product information and exploded parts diagrams for:

- Great Plains Rifle
- Trade Rifle
- Deerstalker Rifle
- Plains Pistol



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Introduction

This publication has been developed to provide the fullest possible information about Lyman muzzleloaders. Information contained herein—especially the operational procedures of loading and cleaning—can almost always be used when operating guns of another make.

Repair and Warranty Service

For factory warranty service or repairs, please direct your Lyman muzzleloader as follows:

Great Plains Rifle, Trade Rifle, Deerstalker, Plains Pistol

Dixon Muzzleloading, 9952 Kunkels Mill Road, Kempton, PA 19529
610-756-6271

Contact Dixon only for warranty work. Call Lyman direct for general technical service information.
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(Dixon Muzzleloading is Lyman's national warranty repair station for the guns designated.)

Attach a complete letter of information to the outside of the package and package securely. Use sufficient cushioning material to prevent movement of the gun in package during shipment. For minor non-warranty repairs, check with gunsmiths in your area.

Lyman®



Dear Black Powder Shooter:

Congratulations on purchasing your new Lyman Black Powder Gun. All of our black powder products are the result of extensive thought and testing. With proper care, your new gun should bring you a lifetime of shooting pleasure. Before firing your gun, there are a few precautions that should be followed. Please read these instructions carefully.

1. If your new rifle is a flintlock, we have function tested the lock assembly, flint and frizzen to ensure that it provides proper ignition. Therefore, please do not be concerned with the resulting marks on the frizzen—it is simply a reminder of our comprehensive factory inspection.
2. The barrel's bore contains a heavy duty preservative that may resemble rusty oil. It is not rust! This preservative must be thoroughly removed before firing to obtain maximum accuracy.

Directions:

- A. Swab the bore with some form of solvent or penetrating oil (example: WD-40 or Hoppe's #9). Let soak overnight.
 - B. Brush out the following day using a nylon brush wrapped with 00 steel wool or a brass brush (must be under bore diameter to prevent bristles from jamming at the breech of the barrel).
 - C. Wipe out using soft flannel (avoid t-shirt material—it doesn't work well using cleaning jag and has a tendency to stay down the bore). The brass coloration you see is normal after cleaning.
3. The stock has been stained with oil leaving a dull finish. As with all oil finished stocks, rubbing in additional thin coats of oil (Linseed or Birchwood Casey's Tru-Oil) will further enhance the finish and protect the stock.

If you have any questions on these instructions, please call our customer service department at 1-800-22-LYMAN (except AK, HI, CT and foreign who may call 860-632-2020). We will be glad to provide whatever assistance you require.

Sincerely,

Your friends at Lyman Products

SPECIAL PRODUCT INFORMATION— PLEASE READ

Check List for Lyman Black Powder Guns

Upon opening the carton containing your Black Powder Gun you should find the following items.

Black Powder Model-Finished

Great Plains Rifle
Great Plains Hunter
Trade Rifle
Deerstalker

Contents

Stock
Ramrod
Barrel
Wedges (One for Trade & Deerstalker
two for Great Plains)
Primitive rear sight
(Trade & Great Plains)
Adjustable rear sight
(Trade & Great Plains)
Lyman 16AML & 37AML Sights
(Deerstalker only)
Cleaning Jag
Flint (Flint models only)

Great Plains Rifle Kit
Great Plains Rifle Flint Kit

Stock
Ramrod
Barrel
Wedges (One for Trade & Deerstalker
two for Great Plains)
Primitive rear sight
Adjustable rear sight
Cleaning Jag
Flint (Flint Models only)
Lock Assembly
Trigger Assembly
Trigger Guard
Bag Containing Assembly Hardware

Plains Pistol Finished

Assembled Gun
Ramrod
Polybag Containing:
Cleaning Jag
Lock Screw Bushing

Plains Pistol Kit

Stock
Barrel
Lock Assembly
Trigger Assembly
Trigger Guard
Ramrod
Bag Containing Assembly Hardware
Belt Hook

SOME WORDS OF CAUTION

1. All Lyman black powder pistols and rifles are intended for use with black powder or Pyrodex only. Use of any other propellant can cause serious injury to the shooter and damage to the firearm. Never use smokeless powder.
2. Guard against overcharges. Follow the instructions and do not exceed suggested charges in this booklet.
3. Wear safety glasses when shooting black powder firearms. Shatterproof shooting glasses will protect the eyes from sparks, broken percussion caps, hot gases, and lead fragments.
4. Protect your hearing. Use ear plugs or muffs when firing any firearm.
5. Be certain the projectile is seated firmly against the powder charge. Any gap between the projectile and powder charge could cause serious damage to the firearm and injury to the shooter. Hunters, in particular, should check the position of the projectile in the barrel at regular intervals when in the field. Decap/deprime before checking, though.
6. Use only non-synthetic cloth patching of suitable thickness when loading round balls. ***Do not use Poly Patches or any synthetic wad with a round ball. The ball can separate and act as a bore obstruction.***
7. Never charge a muzzleloader directly from a powder flask. A sudden powder ignition from a lingering spark could cause the entire flask to explode. Instead, use an individual charge from a powder measure when loading your Lyman gun.
8. Never smoke when handling black powder.
9. Before each shooting session, check your black powder firearm carefully.
10. ***Before relying on the half-cock position, make sure the hammer will not fall when the trigger is pulled. Note: half-cock is not a "safety!"***
11. While on the firing line, keep all black powder canisters closed.
12. Keep spectators to the rear of the shooter. Standing beside a muzzleloader is not safe enough. Flames, hot gases and percussion cap fragments may fly from the side of the firearm causing injury.
13. Keep clear of the muzzle, particularly during loading.
14. If the gun misfires, keep the muzzle pointed down range for at least a minute before attempting to reprime it. There is always the chance a spark is smoldering in the powder charge and the gun could fire at any second.
15. Treat unprimed flintlocks as loaded weapons. Sometimes the sparks of an unprimed flintlock can fire the gun.
16. Use a non-flammable material to hold the flint in place. Cloth, cardboard or canvas could hold a lingering spark which might set off the next priming charge unexpectedly.
17. Store black powder and percussion caps in separate locations. Use their original containers when possible. Caps are sensitive to static electricity, percussion, heat and flame. Check local fire regulations before storing black powder in the home.
18. Follow the basic rules of firearms safety when handling any black powder firearm.
19. If you sell or give this Lyman black powder gun to someone else, give him this booklet too. Copies of this booklet are available from Lyman.

FLINTLOCK AND CAPLOCK—HOW THEY WORK

The Flintlock

Today's flintlock evolved around 1600 in Europe and was the most efficient lock for firearms use until the percussion system was perfected in the early 1800s. Even so, flintlock rifles remained in service in some of America's more rural areas until, perhaps, the turn of the century.

Simplicity of operation typifies the flintlock since all the shooter must have is a bit of priming powder and a flint for the hammer's jaws. This flint must be held securely and wrapping it in a bit of leather or thin sheet of lead gives the upper and lower jaws of the "cock" something to hold onto—and the flint as well.

The flintlock operates in the following manner: The hammer is placed on full cock, the pan is charged with either 4Fg or 3Fg powder and the frizzen is snapped down over the powder pan. Now the lock is ready for firing. Usually the hammer is lowered to half cock unless the shot will be taken immediately.

To fire the gun, the hammer is brought back to the full cock position, the gun raised and aimed—the trigger pulled. The hammer falls and the fireworks begin.

The flint strikes the face of the frizzen and this forceful scraping causes a shower of sparks—which are actually tiny pieces of molten metal from the frizzen face. These sparks drop into the powder pan and—usually—ignite the charge of priming powder. The flash of the igniting primer charge travels through the barrel's touch hole and ignites the main charge. In all cases, successful firing is contingent on having a sharp flint tightly held in the hammer, a clean hard face on the frizzen, fine dry powder in the pan, a clean touch hole and main charge properly loaded in good condition.

That is how the chain of events should go anyway. Sometimes the main charge decides to "play dead" and all the shooter gets is the poof of the igniting primer charge ... hence the old saying of "flash in the pan."

The flintlock isn't perfect but the shooter can go a long way towards minimizing most of the problems if he takes the time to understand the gun's needs. Here are some of the major points:

Vulnerable Priming—Wind and water can cause misfires without too much trouble. The solution lies in awareness of the problem and the possible use of a waterproof hood which fits over the lock area. Bullet lube or grease applied to the outer edge of the frizzen and powder pan will help to keep water away from the powder. Flints should be clamped tightly in the hammer's jaws and replaced when they are dull.

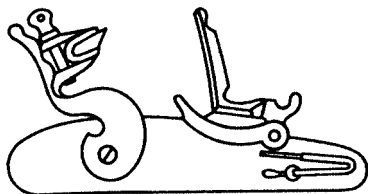
Pan Flash—This can be a real problem for any flintlock shooter since the eruption of the priming is a very real and spectacular event! The shooter can minimize this distraction by using priming powder sparingly.

Long Lock Time—Only practice and experience can teach the shooter to control his particular gun.

To the uninitiated the combination of a heavy hammer striking the springloaded frizzen (which snaps open adding yet another force to confound aiming efforts) and the resultant "whoosh" of the igniting primer charge is more than distracting. By the time the main charge goes off, the sights may be way off target and the shooter's eyes screwed shut while he wonders when all the commotion will stop!

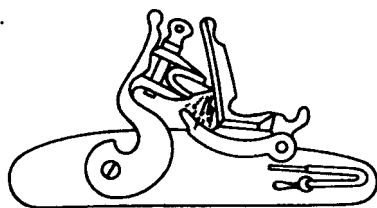
The solution? Keep practicing. Get to know your flintlock and take care of it. Wear shooting glasses for extra confidence and protection.

1.



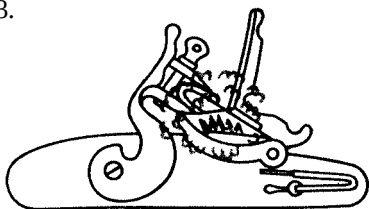
The flintlock is poised at full cock and ready for firing.

2.



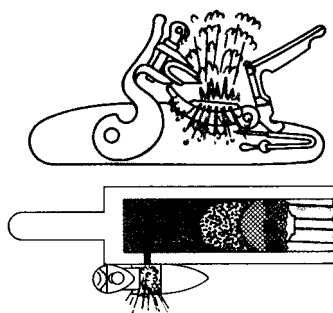
As the hammer falls, the leading edge of the flint makes initial contact with the face of the frizzen. The continuing force of the hammer starts to rock the springloaded frizzen back and up on its pivot. Sparks generated here are minor and probably offer very little to the ignition process.

3.



The hammer continues to fall and the direct blow of the flint against the frizzen changes to a heavy scraping of the frizzen by the flint. This produces a shower of sparks which start the ignition of the priming powder.

4.



The priming is fully ignited and the main charge has just begun to burn. Typically, there will be a certain amount of the main charge pushed up the barrel away from the ball before the powder is consumed.



This Brown Bess was heavily primed and the resulting eruption has seriously distracted the shooter. Remember—use a light priming charge and wear safety glasses for extra confidence and protection.



Bicentennial skirmishers use a shield around the side of their powder pans to prevent touch hole blast from striking the shooter to their right. All flintlock shooters should be extra careful since this jet of gas is very hot and can easily injure someone.

THE CAPLOCK

While the flintlock was a distinct improvement over the ignition systems it superseded, it did have its problems and, as is usual, experiments were conducted by a variety of people in America and Europe seeking an improved replacement. After several not-so-effective alternatives had been tried, the percussion system as we know it today was devised, proved and accepted. This new system was relatively impervious to the elements and offered the shooter faster lock time and less distracting primer ignition. The percussion lock was widespread by the 1830's/1840's.

The caplock is even simpler than the flintlock and is comprised of only three functioning components: Hammer, nipple and percussion cap. It works like this: With the gun loaded, the hammer is eased back to full cock and a small copper cap is pressed down over the nipple. This little cap contains a dab of fulminate sealed into the top. The cap is held firmly in place by the "skirts" or sides which are sized to grip the outside of the nipple.

To fire the piece, the hammer is brought to full cock and released by the trigger. The falling hammer hits home and crushes the fragile copper cap between the recessed hammer face and nipple, exploding the fulminate. The little spurt of flame is directed down inside the nipple along a flash channel leading through the side of the barrel into the main charge—which is then ignited.

The percussion system flourished only a few decades before the metallic cartridge was perfected and accepted, completely replacing the caplock system on all guns manufactured after the turn of the twentieth century—if not before. Today it is the most preferred muzzle-loading ignition system on the market.

The percussion lock guns on today's market are very reliable providing the nipple channel is kept open and dry and the main charge is in good shape.

Warning: Do not dry fire. This will damage the nipple.

HOW THE CAPLOCK WORKS



Draw the hammer to full cock. Firmly press a cap down over the nipple after glancing down the flash channel for obstructions. Lower the hammer to half-cock if the shot will not be made right away. Since your rifle is equipped with a fly, the hammer sear must be lowered past the half-cock notch and then brought back up and into the notch. **Half-cock is not a safety.**



NOTE: If the cap fits a bit loosely squeeze the sides, or skirts, a bit so they will grip the sides of the nipple and the cap will stay securely in place.

Ease the hammer back to full cock when you are ready to fire.

After firing the shot, leave the hammer down over the expended cap. This restricts the flow of air through the barrel and helps smother any sparks lingering after your last shot.

HOW TO LOAD ...

The Patched Roundball

Without a doubt, the most popular and widely used muzzle-loading projectile is the patched roundball. This combination of a soft lead sphere and a scrap of lubricated cloth is peculiarly American and has been with us ever since its worth was proven prior to and during our Revolutionary War.

Over the years different styles of rifling have been devised and used with some degree of success. Characteristics ran from extremely deep grooves to relatively shallow ones; from two or three lands to eight or more. Throughout this period and up through today the most constant single factor has been the patch around the ball—that hasn't changed ... nor has the lead ball, for that matter.

A roundball, whether fired from a rifle or a smoothbore, needs the patch to take up the slack, called "windage", between the ball and barrel walls. A properly fitted ball and patch will seal the bore and keep propellant gases behind the bullet where they do the most good. At the same time the ball is held rigidly in position and not allowed to wander from side to side as it speeds towards the muzzle. In a smoothbore this means the ball leaves the muzzle the same way each shot; it does the same in a rifle plus the ball is stabilized by the rifling and given a high degree of accuracy.

Use of the patched roundball in a single-shot pistol is virtually identical to its use in a long gun in terms of interior ballistics and loading operations.

Loading the patched roundball requires the same techniques regardless whether the gun is rifled or smoothbore, flintlock or caplock. The following preliminaries should be performed before the first charge of the day is poured down the barrel:

Since oil and any other form of moisture is the enemy of the successful black powder shooter, the bore and chamber area should receive a good cleaning just before the gun is loaded. Run fresh patches down the barrel until they come out clean and dry. Clean the flash channels of both flintlocks and caplocks with pipe cleaners—pushing the flexible stem on into the barrel.

Next, while outdoors, place a #11 cap on the nipple of the caplock, hold the muzzle near a blade of grass, bit of dust, etc. and drop the gun's hammer on the cap. Detonation of the fulminate will cause a small but noticeable blast to emanate from the muzzle moving the blade of grass or bit of dust. If the blast does not manifest itself, the shooter must go back over the gun to clear away the obstruction.

Finally, after all is clear, run a last clean patch down the barrel to catch any freshly dislodged lubricant. Now the gun is ready to be loaded.

LOADING STEPS

1. Set the rifle's butt on the ground with the muzzle inclined in a safe direction—well away from your body. Measure and pour the powder down the barrel using an adjustable measure or pre-weighed charges.
2. Lay your strip of lubricated patching cloth (or pre-cut patch) over the muzzle. Center the ball and press it into the bore until it is flush with the muzzle. Tightfitting combinations can be seated by reversing your ball starter and “rolling” it over the ball.
3. Cut the excess patching from around the ball. Specially designed patch knives are ideal for this task although nearly any sharp object will suffice. This is unnecessary for pre-cut patches.
4. Push the ball into the bore using your ball starter.
5. Seat the ball firmly on the powder with the ramrod. The desired ramming stroke is smooth and uninterrupted. Jabbing or tamping the ball down the bore may result in serious deformation or uneven seating force upon the charge. Make sure the ball is firmly seated since an air space could cause a bulged barrel—or worse. Marking your ramrod at the appropriate level is a handy trick. Return the ramrod to the thimbles.
6. Place the hammer on full cock and prime your piece—either with powder or #11 percussion cap. You are ready to fire. Lower the hammer to half-cock if the shot will not be made right away. Since your rifle is equipped with a fly, the hammer sear must be lowered past the half-cock notch and then brought back up and into the notch. Half-cock is not a safety.

SAFETY NOTES

Caplocks: After firing leave the hammer down over the exploded cap as you reload. This helps smother any sparks left from the preceding shot. Keep your hands and face away from the muzzle.

Flintlocks: Before squeezing the trigger at the range, check to your sides and make sure your buddy is not standing in line with your barrel's touch-hole. When a fully loaded flintlock goes off there is a jet of hot gas that shoots out from the side and leaves its mark on unwary bystanders. Warn your companions and take extra care before squeezing the trigger.

Be sure there is no gap between the lockplate/priming pan and the barrel flat beneath the vent hole. Fine priming powder can work through a gap, accumulate in the lock mortise and, when ignited, cause gun damage and injury to the shooter and bystanders. Periodically remove and clean both the lock and the stock's lock mortise.

All Misfires: Should your gun fail to fire . . . keep the muzzle pointed in a safe direction until the chance of a hangfire has passed and you are satisfied the charge is truly "dead". Next, inspect the nipple and/or vent, remove any obvious obstruction, reprime and try the shot again. If the charge continues to balk, you may have to work some fine powder into the nipple or vent with your pick, reprime and shoot. At worst, it may be necessary to have a gunsmith dismantle the rifle, unbreech the barrel and drive out the load.

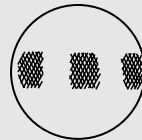
Balls Seated Without Powder: This seems to happen to everyone at one time or another. It may be necessary to use a “worm” or similar device—but before you go to those extremes try this: Work some fine powder into the flash channel, prime and shoot. Work more powder into the channel and barrel, seat the ball, prime and shoot. This should do it.

SHOOTING TIPS ...

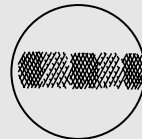
CHOOSING BALL AND PATCH

Accuracy with a roundball rifle is based on a paradox; an underside ball is spun by rifling that it never touches! The secret, if there is one, lies in the cloth patch. It functions as a gas seal and, theoretically at least, completely seals the bore. It also transfers to the ball the grip and the spin of the rifling. To perform its duties, the cloth patch should fill the grooves of the rifle. In other words, it should be under considerable compression not only where it contacts the lands, but also at the bottom of each groove. A tight fitting combination of patch and ball is an absolute must for accuracy and considerable cloth must be packed into each groove to completely seal the bore.

When a perfectly patched roundball is driven through a barrel, it will show cloth marks completely around its circumference, like the ball on the right. These marks will be light where the ball and patch touched the grooves and heavy where they touched the lands.



Incorrect

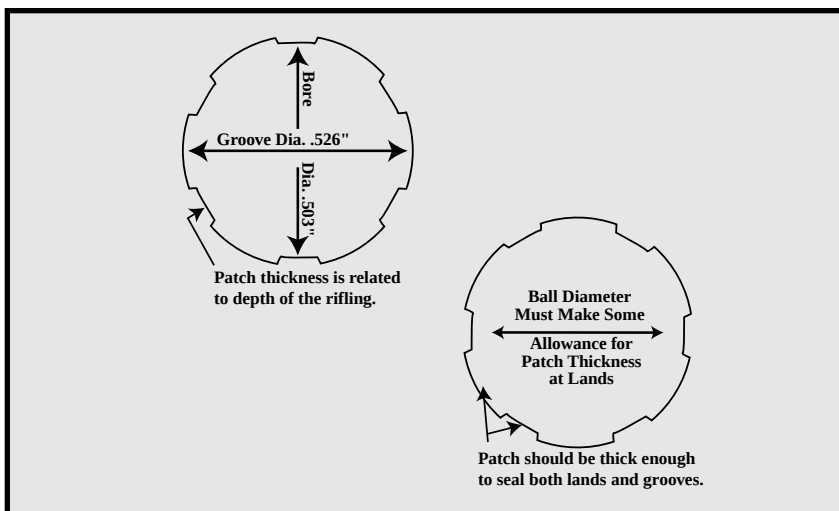


Correct

Your selection of the proper cloth patching should be based on an understanding of the relationship between the bore of your rifle and the roundball which will be used. Ball diameter must be less than that of the bore and the cloth must not only fill the grooves but also allow a tight sliding fit between the lands and the patched ball. Follow the suggestions of your rifle's manufacturer concerning projectile diameter. Several companies make specific diameters available either with the purchase of the gun or as a component in a valuable accessory kit. Most other guns will have standardized bore sizes and will be suited for one of the standard roundball diameters such as .490", .495", .530" or .535". To make your final judgment on ball and patch you must measure the bore.

The best way to measure the bore of our rifle is with a soft lead slug which has the rifling engraved on its diameter. Remove the barrel from the stock. Slide a brass rod, which is about 12" long and just under bore diameter (about 3/8" or 7/16"), into the barrel. Start an oversized slug into the muzzle and drive it into the barrel approximately 2" using a brass punch. Now tip the muzzle end of the barrel downwards so that the brass rod slides into the slug. Repeat this procedure several times until the rod drives the slug from the barrel. The engraved slug will have a perfect print of your bore's dimension. Now, with a micrometer, measure both the bore and groove diameter. Here's a sample:

Groove - .526, Bore - .503"



We know the ball must be smaller than the bore diameter so let's select a .498" diameter ball as the best choice for this bore.

With the ball adequately undersize (.005") to fit into the bore we now determine the needed patching thickness to seal the grooves.

Groove	.526"
Ball	<u>-.498"</u>
	.028" difference

Now divide the difference by two and the minimum patching thickness is determined: .014". Remember, there is a thickness of patching on each side of the ball and the difference between the ball and groove diameters must be halved to determine the thickness of cloth needed. Usually it is better to buy cloth that is several thousandths of an inch thicker since the lubricated material will compress upon loading.

Now that you're on the way—keep experimenting with your rifle. Vary the powder charge, cleaning technique, patching or whatever. That's part of the fun of muzzle-loading. But remember to vary only one condition at a time so you can easily keep track of cause and effect.

Lyman suggests that only natural-fiber cloth be used for patching; not synthetics or natural/synthetic blends. The heat of ignition can melt some synthetics resulting in inaccuracy and deposits in your bore. Furthermore, Lyman suggests that plastic cups or patching systems not be used since there can be inadvertent misuse which results in unsafe shooting conditions. Stick with the traditional cloth patch.

HOW TO LOAD ... The Minie, Solid-Base Conical, or Sabots in a Rifle

As for every muzzle-loading gun, there are several operations the wise shooter performs before pouring the first powder charge down the bore. First, he dries the bore and chamber area with clean patches and removes any oil accumulation visible in the nipple and vent. Next, the shooter will snap one or

two caps on the nipple to make sure the channel from the nipple through the barrel wall is open. For a quick visual verification place the muzzle near a leaf, blade of grass or similar object—cap blast will noticeably move it around if the vent is clear. Finally, run the patch down the bore one last time to collect any new debris. Now, you're ready to load and here's how it goes:

Set the gun's butt on the ground with the barrel angled so the muzzle is well away from your body.

Pour the measured charge down the barrel. Many shooters use pre-measured charges loaded into cardboard or plastic tubing. The important thing to remember is not to load directly from a flask or horn. There have been instances where an ember from the preceding shot has remained alive long enough to ignite the next charge as it is dropped down the barrel. The resulting flash touched off the powder within the flask, causing serious injury to the shooter. Use a separate measure.

Conical or Minies

Push the lubricated conical, base-down, into the bore, place the recessed ramrod head over the nose and smoothly ram it home. Strive for a smooth motion that leaves the bullet seated atop the powder without air space or undue compression. Try to avoid jabbing or tamping the bullet for this may cause the skirt/base to become deformed, which will certainly have an adverse affect on the projectile's accuracy. Remember, unless the bullet is seated fully and correctly, an air space may result—and that could mean a bulged or split barrel. Uniformity in loading is the secret to good marksmanship when shooting a Minie or solid-base conical.

Conicals can shift off the powder charge and down towards the muzzle if you carry the gun in even a slight barrel-down position. Hunters are particularly exposed to this and should take special precautions: Stop frequently, deprime/decap and use your ramrod to reseat the conical. Afterward, reprime/recap and continue hunting.

Sabots

Sabot bullets are designed to be seated with the bullet inside of the sabot. Never seat the sabot and bullet separately! Place the base of the sabot with a bullet into the muzzle of the rifle and align it as straight as possible with the bore. Using a ball starter, drive the sabot and bullet several inches into the barrel. Use the recessed end of the ramrod to drive the sabot and bullet the rest of the way down the barrel. Try to do this smoothly and firmly, seating the base of the sabot against the powder charge. Uniformity in loading is key to good accuracy.

Bring the hammer to full cock and press a percussion cap firmly over the nipple—you're ready to fire. Lower the hammer to half-cock if the shot will not be made right away. Since your rifle is equipped with a fly, the hammer sear must be lowered past the half-cock notch and then brought back up and into the notch. **Half-cock is not a safety.**

After firing, leave the hammer down over the exploded cap as you reload. This restricts air circulation and helps smother any sparks left behind by your preceding shot.

Remember—avoid having your hands or face directly over the muzzle during the loading operation. After the gun is loaded follow the safety rules used for modern firearms.

CONICAL BULLET SUITABILITY CHART

1. Bullet No. 454616–Popularly known as the "Maxi-ball," this bullet is designed specifically for the T/C Hawken with 1/48" twist and nominal bore diameter of .45".
2. Bullet No. 457121PH–Designed for Navy Arms Parker-Hale Volunteer rifles with 1/20" twists. Casts a nominal .456/.453" diameter in pure lead.
3. Bullet No. 504617–Designed for the Lyman Trade Rifle, Deerstalker, T/C Hawken and other rifles with nominal .500" bore and 1/48" twist.
4. Bullet No. 508656–This is the .50 cal. version of our new Plains bullets which offer greater bearing surface areas for improved accuracy. It also features a two diameter design for easy loading. Fits most traditional .50 cal. muzzleloaders.
5. Bullet No. 508668–This is the .50 cal. version of our new Shocker bullets. The two diameter design makes loading easy and the heavy weight provides excellent knock down power. This bullet works best with fast twist barrels. Available as a mould or as packaged bullets
6. Bullet No. 548669–This is the .54 cal. version of our new Shocker bullets. Like the .50 cal. design, this bullet loads easily and is an excellent choice for hunting. It is designed for fast twist barrels, such as the Lyman Great Plains Hunter. Available as a mould or as packaged bullets.
7. Bullet No. 548657–This is the .54 cal. version of our new Plains bullets. Like the .50 cal. design, this is a two diameter bullet with a greater bearing surface area than common Maxi bullet designs. Fits most traditional .54 cal. muzzleloaders.
8. Bullet No. 575213–The standard of .58 shooters. Fits any .58 gun on the market today. Does well with charges up to 70 grains FFg.
9. Bullet No. 575213PH–This is the same bullet as the 510 gr. 575213, but with a shallow base plug which increases the bullet's weight to 566 grains. Designed for Navy Arms .58 cal. Parker-Hale rifles.
10. Bullet No. 577611–This bullet takes up where the 213 leaves off at 70 grains of FFg. Fits any .58 gun on the market today a bit tighter and gun will require cleaning more often.

MUZZLELOADING RIFLES				
.45		.50		
				
454616 220 gr.	457121PH Conical 475 gr.	504617 370 gr.	508656 MAXI 395 gr.	508668 Shocker 420 gr.

MUZZLELOADING RIFLES				
.54		.58 Orig. & Replica– 58 cal. Rifled Musket		
		Old Style 		
548669 Shocker 450 gr.	548657 MAXI 450 gr.	575213 OS, MINNIE 460 gr.	575213PH MINIE 566 gr.	577611 MINIE 540 gr.

DISASSEMBLY AND CLEANING OF RIFLES AND PLAINS PISTOL

You must clean your rifle or pistol after each shooting session to prevent rust and corrosion from damaging the metal parts. The Lyman Great Plains Rifle, Trade Rifle, Deerstalker or Plains Pistol may be easily disassembled for cleaning by removing the ramrod, driving out the barrel wedge in the forearm, drawing the hammer to full cock and lifting the barrel (muzzle first) out of stock. The hooked breech will slip right out of the tang unit with no further disassembly needed. Of course, these Lyman guns can be cleaned without any disassembly but care should be taken to prevent water and solvents from entering the stock or lock mechanism.

TWO CLEANING TECHNIQUES:

HOT SOAPY WATER—The traditional way to clean a muzzleloader.

1. Scrub the bore with a strong solution of hot soapy water. Wipe all powder fouling from other metal parts.
2. Flush the barrel with the hottest clean water available. This not only removes the soap but also heats the steel which helps in the drying process.
3. Dry all parts.
4. Apply a good coat of oil or moisture-displacing lubricant to all metal parts and reassemble. A silicone gun rag is excellent for treating the exterior of the muzzleloader.
5. Inspect for the next few days just to be safe.

MODERN SOLVENTS—Just as effective as soapy water if properly done. Solvents designed specifically for black powder guns are now on the market and the old standbys may be used as well.

1. Scrub the bore with brass brush and lots of patches. Wipe down all metal parts.
2. Using plenty of clean patches, wipe the bore dry. All guns are supplied with a cleaning jag of the proper size. The jag screws into the end of the ramrod and will securely hold cleaning patches. Dry all metal parts.
3. Apply oil to all metal parts and reassemble. A silicone gun rag is excellent for treating the exterior of the muzzleloader.
4. Inspect for the next few days just to be safe.

Cleaning Note

Note: The powder channel inside the breech plug is smaller than the bore diameter and does not allow the cleaning jag to enter. Lyman recommends the use of a .35 cal. cleaning brush and/or a slotted tip cleaning rod to reach into this area.

Maximum Loads

Lyman Black Powder Guns

The following loads are maximum combinations of propellant and projectile for Lyman Black Powder guns. Do Not Exceed!

Plains Pistol

.50 - .495" RB	40 grs. 3Fg
.54 - .535" RB	50 grs. 3 Fg

Rifles

.50	.495" RB	110 grs. 2Fg or	90 grs. 3Fg
	240 gr. Sabot	100 grs. 2Fg or	90 grs. 3Fg
	335 gr. Sabot	100 grs. 2Fg or	80 grs. 3Fg
	420 gr. Maxi	100 grs. 2Fg or	80 grs. 3Fg
.54	.535" RB	120 grs. 2Fg or	100 grs. 3Fg
	335 gr. Sabot	110 grs. 2Fg or	90 grs. 3Fg
	450 gr. Maxi	110 grs. 2Fg or	90 grs. 3Fg

Round Ball Selection Guide

.50 cal. .490"/.495"	.54 cal. .530"/.535"
----------------------	----------------------

Note: Equivalent loads of Pyrodex RS, Select, or P are acceptable. Pyrodex pellets are not recommended with Lyman side hammer guns due to difficult ignition.

"SHOCKING PERFORMANCE"

Lyman's New *Shocker*[™] Muzzleloading Bullets

Our new Shocker Black Powder bullets are guaranteed to out perform the competition. The unique tapered design allows easy loading. Lubricated with new Lyman Black Powder Gold assures a perfect gas seal for best accuracy. Semi-pointed design gives higher velocity and energy to take big game quickly and cleanly out to .125 yards for total performance get Lyman's Shockers.



Questions? Call toll free 1-800-22-LYMAN

Lyman[®]

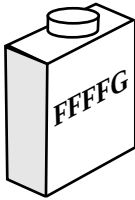
The Innovators in Lead Bullet Design.

Dept. 000. 475 Smith St. Middletown, CT 06457

SHOOTING TIPS

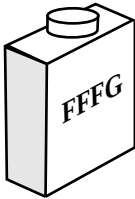
Black Powder Guide

Note: This chart is intended as a guide to show the appropriate uses of Pyrodex and Black Powder. It is not necessary to follow them exactly.



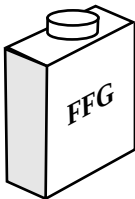
FFFFG

Commonly called “Four F”, this is the finest granulation and is used for priming flintlocks. Due to its rather limited use, it is usually somewhat difficult to obtain. When necessary, FFFFG may be substituted. There is no Pyrodex equivalent.



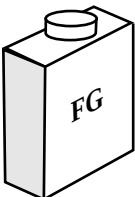
FFFG/Pyrodex “P”

Commonly called “Triple F”, this powder is used in most single shot pistols and all percussion revolvers. It is also popular for all smaller caliber rifles up to and including 50 caliber. When FFFFG is not available, FFFG may be used to prime a flint lock.



FFG/Pyrodex “RS” and “Select”

Commonly called “Double F”, this is a popular powder for rifles over 50 caliber and up to 75 caliber. Also used in the larger caliber single shot pistols and most shotguns.



FG

Commonly called “Single F”, this is the coarsest granulation used for small arms. Use is pretty much restricted to rifles over 75 caliber and large bore shotguns. There is no Pyrodex equivalent.

GETTING STARTED IN CASTING

Making the move into bullet casting is easy and relatively inexpensive, especially considering the satisfaction and enjoyment you will receive by moulding your own minie, maxi and round balls. In addition, the increased per-shot economy will quickly defray the cost of the casting equipment. As a muzzleloader, your start-up costs will also be reduced since you will not need to purchase sizing and lubricating equipment.

CASTING ACCESSORIES

Lyman offers a complete line of bullet casting accessories including casting furnaces; minie, maxi and round ball moulds and most other casting equipment. For the muzzleloader who is just starting out in casting, we recommend our Mini-Mag Furnace. This 400 watt furnace is designed to perfectly fill the needs of the black powder shooter. In about 30 minutes, this furnace will bring 8 pounds of lead up to casting temperature.

For a complete listing of all Lyman's casting equipment, please see our current catalog which is available by writing to:

Lyman Products, 475 Smith St., Middletown, CT 06457
or call 1-800-22-Lyman.

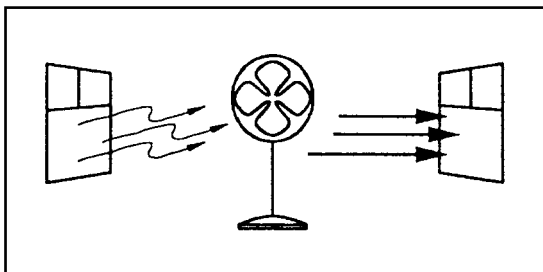


WARNING: Melting lead and casting lead objects will expose you and others in the area to lead, which is known to cause birth defects, other reproductive harm and cancer.

REDUCING EXPOSURE: Lead contamination in the air, in dust, and on your skin is invisible. Keep children and pregnant women away during use and until cleanup is complete.

Risk can be reduced-but not eliminated-with strong ventilation; washing hands immediately after use of these products before eating or smoking; and careful cleaning of surfaces and floors with disposable wipes, after lead dust has had a chance to settle. Use a lead specific cleaner with EDTA, or a high-phosphate detergent (like most detergents sold for electric dishwashers) and bag used wipes for disposal.

Use Strong Ventilation



BULLET CASTING BASICS

The blackpowder shooter is almost always faced with the need to cast his own bullets, be they round, conical or minies. A bullet mould is absolutely necessary and generations of shooters have used—and continue to use—Lyman precision bullet moulds. Other needed supplies include pure lead, melting pot, ladle, fluxing substance, hammer handle/mallet and towel or blanket.

Caution: If you are melting lead on the kitchen stove, exercise care to avoid lead contamination of stove, food and food preparation and serving utensils.

First carefully clean all oil and grease from your mould, both the cavity and the precision-ground block faces. Now the mould is ready for casting.

Second, prepare your molten lead, flux and skim off the impurities. When the molten lead is properly cleaned it will be a bright silver.

Caution: Breathing or ingestion of lead or vapors constitutes a potentially serious health hazard.

Third, place your ladle in the pot and let it heat to the lead's temperature.

Now arrange your towel to cushion the newly cast bullets as they drop from the mould and place the hammer handle or mallet close by.

You're all set.

Pour molten lead from the ladle into the mould in a rapid continuous manner. Don't interrupt the pour or an imperfect bullet will result. The first few bullets will be flawed regardless of your expertise because the mould itself needs to be brought up to proper temperature. This can best be done by actually casting bullets and returning them to the melting pot.

As you finish pouring each bullet, grasp the mallet and strike the sprue cutter, slicing through the lead in the pouring hole just above the bullet's surface.

Caution: Don't drop sprue or flawed bullets directly from the mould into the pot.

Molten lead splashes easily. Periodically—and gently—return the scraps to the pot. Lower the mould close to your towel and open the handles. The bullet should drop freely to the pad. If it doesn't—especially after casting for a while—it may well be overheating and due for a minute's rest!

After you've prepared the desired quantity of bullets be sure to close the mould and position the sprue cutter as if you were about to pour. This will allow the mould to cool with both blocks in perfect alignment. After the mould has cooled, oil it well as it is especially susceptible to rust after the lead has driven out most moisture. The mould will draw moisture from your home—similar to a dry sponge.

The smart caster is well-protected from splashes of molten lead by gloves and eye protection and works in a well-lighted and well-ventilated room.

SIGHT ADJUSTMENT

Lyman Muzzleloaders

Lyman's Great Plains and Trade Rifles are shipped with two types of rear sights. The shooter can choose the style preferred and save the other as a spare.

Front Sight—The sights on these rifles are a combination of traditional appearance and sighting principles proved in more modern times. The front sight is a strong, one-piece, square blade design finished overall in a dark blue/black.

This dark, thick blade permits close holding and fast sight alignment. Blades which are polished brass or silver cause the shooter to "shoot away from the light" due to glare on the blade.

The front sight may be left "as is" or reduced in height, by filing, to raise the point of impact.

Use a cold blue solution to re-blacken the sight after filing.

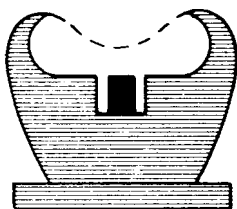
Adjustable Rear Sight—This traditional buckhorn rear sight allows minor elevation adjustments without filing. Turn the screw clockwise to lower the point of impact; counterclockwise to raise the point of impact. Windage adjustments are made by carefully "drifting" the entire rear sight left or right. Remember: move the rear sight in the direction you wish the ball to go.

The best way to "set up" this sight for both hunting and recreational shooting is as follows:

1. Turn the elevation screw clockwise until the elevation arm bottoms in the full "down" position.
2. Load rifle with your hunting charge and sight in at desired hunting range perhaps 100 yards. File down front sight until the rifle shoots to exact point of aim.
3. Since recreational shooting usually involves circular bullseye targets, the rifle can usually be brought into the "ten ring" by using a six o'clock hold and raising the elevator arm slightly.

The front and rear sight combine to produce the very efficient "Partridge" sighting configuration which is perfect for most hunting and target shooting.

Finished Sight



Primitive Rear Sight—This is a traditional one piece, fixed sight which allows final shape and elevation adjustments to be filed into it by the shooter.

Windage adjustments are made by tapping the rear sight to the left or right as you wish the bullet's impact to shift.

First, determine what charges work best with ball and conical projectiles. Once you have settled on the bullet and charge level, the filing can begin.

You may find the unaltered rear sight is just fine. However, you may discover that you are shooting high—even with the front sight blade buried in the rear sight notch. If that is the case, then here's what you do:

1. File the top of the sight flat until you reach the correct elevation for your selected load. The correct procedure is to file a bit then shoot; file—shoot and so forth until the rifle shoots to the desired point of impact.
2. With the sights set correctly, now is the time to deepen or widen the rear sight notch if you wish. Use a cold blue solution to re-blacken the sight.

The result is a traditional rear sight which utilizes the very practical and efficient "Patridge" configuration—excellent for hunting or target work.

PLAINS PISTOL

The sights are non-adjustable and the front blade must be filed to adjust the elevation. Windage adjustments may be made by "drifting" the rear sight in the direction you wish to move bullet impact.

The rear sight notch width and front blade width are designed to provide a very fine target sight picture. You may widen the rear notch with a jeweler's file if you wish. Use a cold blue solution to re-blacken the sights after filing to eliminate glare.

DEERSTALKER RIFLE

Front Sight—A special new configuration of Lyman #37 hunting front sight designed to fit the dovetail of Lyman Black Powder Rifles. This sight is equipped with a 3/32" white bead for fast shooting.

Rear Sight—A special new configuration of Lyman # 16 Folding Leaf Sight designed to fit the dovetail of Lyman Black Powder Rifles. This open rear sight is equipped with an adjustable elevation blade which is held firmly in place by two lock screws.

In order to change the point of impact, loosen the two lock screws holding the rear sight elevation blade. Raising the elevation blade will raise the point of impact. Lowering the elevation blade will lower the point of impact.

Tighten the lock screw when the elevation blade is in the desired location. In order to make windage adjustments, the entire rear sight can be carefully "drifted" to the right or left. Use a punch made from a soft material such as brass, and strike the base of the sight only. Never strike the folding leaf. Remember: Windage adjustments are made by moving the sight in the direction you wish the ball to go.

The Deerstalker is drilled and tapped for use with Lyman's 57 SML receiver sight which is described under Black Powder Sight Options.

In adjusting any type of iron sight, the following principles hold true:

1. Adjust the rear sight in the direction you wish to move the bullet's impact.
2. Adjust the front sight exactly opposite the direction you wish the bullet's impact to shift.

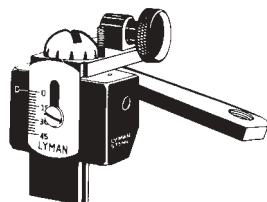
OPTIONAL LYMAN BLACK POWDER SIGHTS

Lyman has been making quality gunsights for shooters for more than 100 years. To meet the needs of today's black powder enthusiast, Lyman offers a number of alternative sight packages which can improve accuracy for the serious target shooter or hunter.

TARGET SIGHTS

Lyman #57 SML Receiver Sights

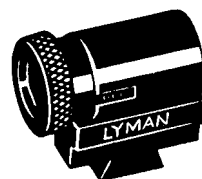
This popular target sight has 1/4 minute micrometer click adjustments for elevation and windage, a quick-release slide and comes with both hunting and target style apertures. The 57 fits the Lyman Trade Rifle, Lyman Deerstalker and most other imported Hawken replicas. Note: Minor drilling and tapping required depending on manufacturer. 57 SMLs made prior to 1989 will not fit T/C Hawkens made after 1988.



57SML

57 GPR

The 57 GPR fits Great Plains Rifles and Great Plains Hunter Rifles. The 57 GPR has the same specifications as the 57 SML described above, however, is equipped with an adapter base that fits the tang angle of Great Plains rifles.



17A

Lyman 17 A Front Sight

Teamed with a Lyman #57 Receiver Sight, this targeted front sight will provide precise accuracy on the range.

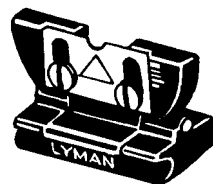
Designed for use with dovetail slot mounting, the sight is supplied with seven interchangeable inserts that are locked into place with a threaded cap. The 17 AML and AEU mount low to the barrel for use with our 57 SML. The 17 ATC sits high above the barrel for use with the high, T/C Creedmore type rear sight. The 17 AML and ATC Sights fit T/C Hawken and other rifles with 3/8" dovetails. The Lyman Great Plains, Trade and Deerstalker Rifles use the 17 AEU sight, as the barrel dovetail is .360.



37ML

HUNTING SIGHTS

Lyman offers both the 16 AML Folding Leaf Sight and the 37 ML Front Sight in a special configuration designed to fit all current Lyman Black Powder Rifles. The 16 Folding Leaf Sight is adjustable for elevation and the leaf can be folded out of the way when the rifle is additionally equipped with a receiver sight. The 37 Front Sight is equipped with a 3/32" white bead for fast shooting. This sight package will fit both the Great Plains and Trade Rifle as well as the Deerstalker Rifle.



16AML

FITTING WEDGE PINS

It may sometimes be necessary to adjust the fit of the wedge pins to the escutcheons. The conditions include adjustment to prevent the pin from falling out if the fit is loose, or the removal of a small amount of material if the wedge pins do not enter completely through.

If the wedge pin is too loose (fig. 4) the fit can be tightened up placing an approximately 1" diameter bar over the barrel lug. Gently tap the bar with a hammer while rolling bar back and forth (fig. 4A). Check fit by installing barrel in stock and installing wedge pin. Repeat as necessary.

Warning: Proceed very carefully since this operation can be overdone quickly.

Wedge pins can on occasion hang up on the inside of the left side escutcheon. To correct this, remove RIGHT side escutcheon and secure in a vise. Use a small jewelers file to remove material from the top of the slot in which the wedge pin slides through. Check fit by placing in cavity (it is not necessary to screw in place) and inserting wedge pin. Repeat as necessary.

For a better fit of wedge pin, remove LEFT side escutcheon, turn upside down and file a 45° bevel on the inside of escutcheon where wedge mates (fig. 5). This will ease entry of the wedge pin.

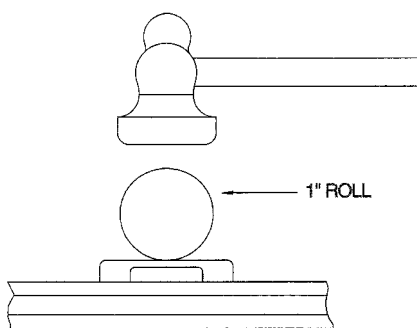


FIG. 4

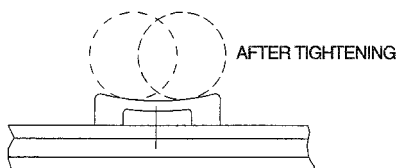


FIG. 4A

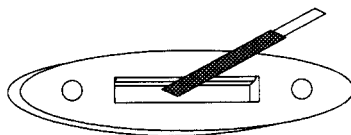
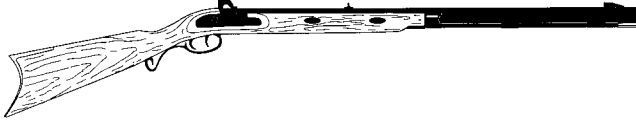


FIG 5

LYMAN GREAT PLAINS RIFLE and GREAT PLAINS HUNTER

Weight: 9 Lbs./OAL: 50"

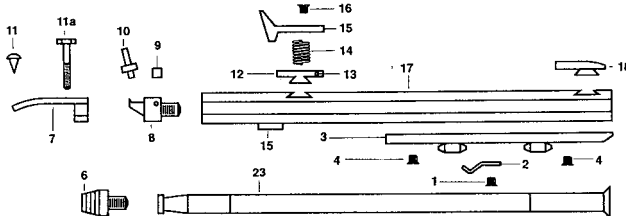


The rifle carried across the Great Plains by western pioneers and fur trappers was the culmination of percussion firearms development. This "Great Plains" rifle was designed and built by such famous makers as Hawken, Gemmer and Demick to the specifications of experienced backwoodsmen. Only the best and most reliable designs and finest workmanship were acceptable. Today, as in the 1800's, the experienced black powder shooter is looking for a very special rifle. The Lyman Great Plains Rifle, with its graceful, yet sturdy lines, is such a gun. The modern muzzleloader will appreciate its combination of strength, reliability, accuracy and authentic good looks. It is truly a black powder gun of remarkable significance.

Each Great Plains Rifle offers such high quality features as a 32", 1 in 60" twist barrel for patched ball and hunting loads, double set triggers, Hawken style percussion "snail" with clean out screw and reliable coil spring lock with correct lock plate. All guns come with walnut stocks and darkened steel furniture. The Great Plains Hunter features a 1 in 32" fast twist barrel for conicals or sabots.

Barrel and Sight Group

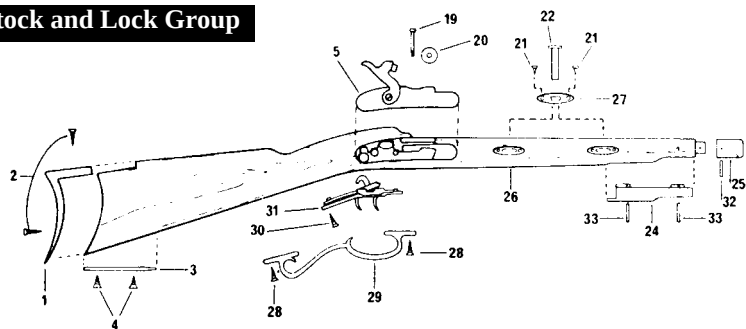
***Note: Breechplugs and barrels not sold separately, only as factory-assembled units.**



Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
1	6030263	Ramrod Spring Screw	14	6030218	Rear Sight Spring
2	6993102	Ramrod Clip Spring	15	6030219	Rear Sight Elev. Assy.
3	6030137	Barrel Rib & Thimbles	16	6030220	Rear Sight Adj. Screw
4	6030134	Rib Screw	16a	6030099	Adj. Rear Sight (complete)
6	6030120	Cleaning Jag (.50 cal.)	16b	6030227	Primitive Rear Sight (not shown)
6a	6030101	Cleaning Jag (.54 cal.)	17a	6030221	Barrel (.50 cal.) per.
7	6030121	Tang	17b	6030222	Barrel (.54 cal.) per.
*8	NA	Breech Plug	17c	6030198	Barrel (.50 cal.) Flint
*8a	NA	Breech Plug (Flint)	17d	6030199	Barrel (.54 cal.) Flint
8b	6030176	Touch Hole Liner (Flint)	17e	6030272	L.H. Barrel (.50 cal.) perc.
9	6030123	Cleanout Plug	17f	6030274	L.H. Barrel (.54 cal.) perc.
10	6030124	Nipple 6 x .75mm	17g	6030276	L.H. Barrel (.50 cal.) Flint
11	6030125	Tang Screw (rear)	17h	6030278	L.H. Barrel (.54 cal.) Flint
11	6030191	Tang Through-Bolt (front)	17i	6030266	GPH Barrel (.50 cal.) per.
12	6030216	Rear Sight Base	17j	6030267	GPH Barrel (.54 cal.) per.
13	6030217	Rear Sight Pin	17k	6030268	GPH L.H. Barrel (.50 cal.) per.
			17l	6030269	GPH L.H. Barrel (.54 cal.) per.
			17m	6031108	GPH Barrel (.50 cal.) Flint
			17n	6031109	GPH Barrel (.54 cal.) Flint
			18	6030223	Front Sight
			23	6030224	Ramrod (10-32 Thread)

Stock and Lock Group



Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
1	6030201	Butt Plate	24	6030206	Entry Pipe
2	6030202	Butt Plate Screws	25	6030207	Forend Cap
3	6030203	Toe Plate	26	6030208	Stock
4	6030204	Toe Plate Screws	26a	6030270	L.H. Stock
5	6030119	Lock Assembly	27	6030209	Escutcheon
5a	6030180	Lock Assembly (Flint)	28	6030210	Trigger Guard Screw
5b	6993170	L.H. Lock Assembly	29	6030211	Trigger Guard
5c	6993171	L.H. Lock Assembly (Flint)	30	6030212	Trigger Assy. Mount Screw
19	6030139	Lock Mounting Screw	31	6030213	Trigger Assembly
20	6030195	Lock Screw Bushing (steel)	32	6030214	Forend Cap Pin
21	6011118	Escutcheon Screw	33	6030215	Entry Pipe Pin
22	6030205	Wedge (front)*			
22a	6030196	Wedge (rear)*			

***Note:** The rear wedge is slightly longer than the front wedge and is installed closest to the lock. Both wedges are installed from the right to the left. This is true for right or left-hand rifles. Sights are also installed from the right to the left. Sights are removed from the left to the right.

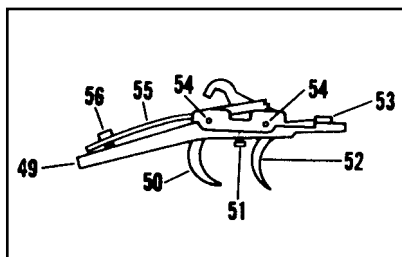
Note: Lock assembly for percussion and flintlock rifles shown on page 30.

Set Trigger Assembly

Your Great Plains Rifle is equipped with a limited adjustment set trigger system. This system provides either a standard trigger for snap shots while hunting or a more sensitive “set” trigger for precision shooting.

Operation: To engage the set trigger pull the hammer back to full cock, squeeze the rear trigger until a “click” is felt, then carefully aim and press the front trigger. Be careful—don’t let the light pull catch you by surprise! You may fire the rifle without engaging the set trigger by using only the front trigger.

Adjustment: Turning the adjustment screw (51) clockwise will lighten the set trigger pull; turning the screw counter-clockwise will increase it. The range of adjustment is limited by Lyman to prevent the set trigger from being lightened to the point where we feel it would be unsafe. Use common sense in this adjustment and in the use of the trigger mechanism.

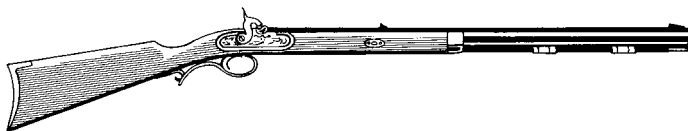


Components

Dwg. Pc. Mk.	Part Number	Description
49	6030162	Trigger Plate
50	6030163	Set Trigger
51	6030164	Adjusting Screw
52	6030165	Hair Trigger
53	6030166	Hair Trigger Spring
54	6030167	Trigger Pivot Pin
55	6030168	Trigger Main Spring
56	6030169	Main Spring Screw

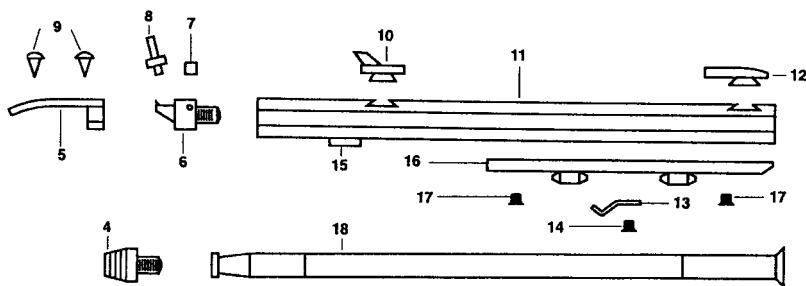
LYMAN TRADE RIFLE

Weight: 8 Lbs./OAL: 46"



The Lyman Trade Rifle is patterned after the sturdy and functional guns developed for the early Indian fur trade. Designed by such companies as Henry and Leman, these original guns were much sought after by trappers, Indians and other rugged wilderness survivors. These men wanted a basic hunting gun that combined the best attributes of a hunting rifle without the expensive frills of more ornate rifles. The Trade Rifle is designed to accurately fire both patch round ball and maxi style conical bullets. It features a 28" octagon barrel with 1 in 48" twist, polished brass furniture, steel rib and blued finish on all steel parts. The single trigger is spring loaded for positive tension. Each rifle includes both fixed "primitive" and elevation adjustable rear sights. The optional 57 SML can be mounted without any modifications.

Barrel and Sight Group

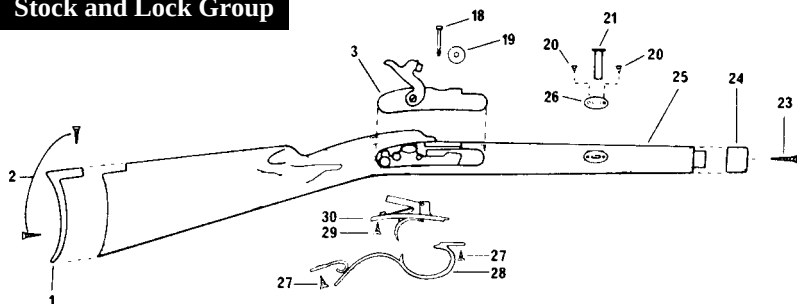


Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
4	6030120	Cleaning Jag (.50 cal.)	11a	6030228	Barrel (.50 cal.) per.
4a	6030101	Cleaning Jag (.54 cal.)	11b	6030229	Barrel (.54 cal.) per.
5	6030121	Tang	11c	6030240	Barrel (.50 cal.) Flint
*6	NA	Breech Plug	11d	6030241	Barrel (.54 cal.) Flint
*6a	NA	Breech Plug (Flint)	12	6030223	Front Sight
6b	6030176	Touch Hole Liner (Flint)	13	6993102	Ramrod Clip Spring
7	6030123	Cleanout Plug	14	6030263	Ramrod Spring Screw
8	6030124	Nipple 6 x .75mm	15	6030138	Barrel Lug (factory installed)
9	6030125	Tang Screws	16	6030137	Barrel Rib & Thimbles
10	6030227	Primitive Rear Sight	17	6030134	Rib Screws
10a	6030099	Adj. Rear Sight (complete) (not shown)	18	6030143	Ramrod (10-32 Thread)

*Note: Breechplugs and barrels not sold separate only as factory-assembled units.

Stock and Lock Group



Components

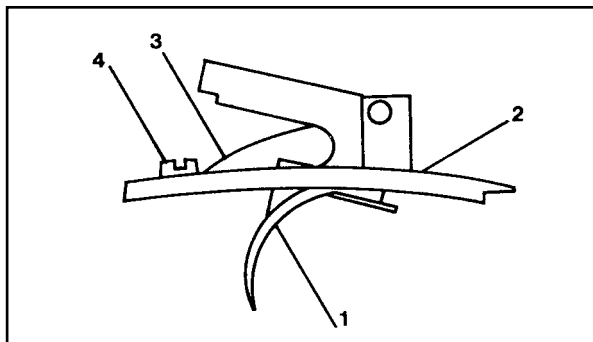
Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
1	6030115	Butt Plate	24	6030145	Forend Cap
2	6030116	Butt Plate Screws	25	6030233	Stock
3	6030119	Lock Assembly	26	6030174	Escutcheon
18	6030139	Lock Mounting Screw	27	6030147	Trigger Guard Screw
19	6030140	Lock Screw Bushing	28	6030225	Trigger Guard
20	6030141	Escutcheon Screw	29	6030149	Trigger Assy Mount Screw
21	6030142	Wedge*	30	6030226	Trigger Assembly
23	6030144	Forend Cap Screw			

***Note:** The wedge is installed from the right to the left. Sights are also installed from the right to the left. Sights are removed from the left to the right.

Note: Lock assemblies for percussion and flint rifles shown on page 30.

Components

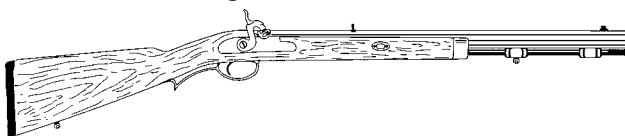
Dwg. Pc. Mk.	Part Number	Description
1	6993118	Trigger
2	6993119	Trigger Plate
3	6993120	Leaf Spring
4	6993121	Spring Screw



Note: Trigger assembly as shown above is the same for both the Trade Rifle and Deerstalker.

DEERSTALKER RIFLE

Weight: 7.5 Lbs./OAL: 41"

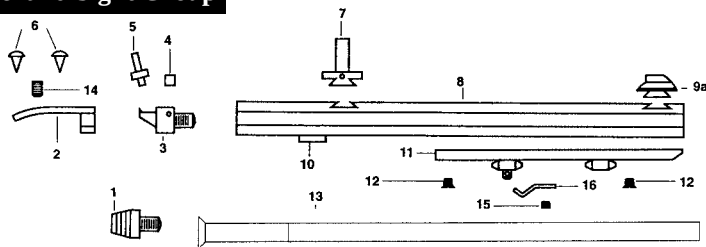


The Lyman Deerstalker is the ideal rifle for the muzzleloader whose primary interest is hunting.

Like all Lyman black powder guns, the Deerstalker has an impressive collection of top-quality rifle features. The rich walnut stock is specially designed with less drop for improved sight picture and includes a handsome rubber pad to lessen recoil. The barrel and all metal parts are blackened to avoid glare. Whether flint or percussion, all Lyman locks employ a rugged, reliable coil mainspring. The barrel has a 1 in 48" twist which will handle a large range of bullet types and weights.

The Deerstalker combines these traditional qualities with the modern features that the serious hunter demands. Each rifle features a specially designed stock with Lyman front and rear hunting sights for an improved sight picture. The shorter barrel and lighter weight make it ideal for carrying on an all day hunt. All hardware is darkened for low glare and all rifles come with sling swivel studs and a handsome rubber pad to reduce recoil. The ultra quiet single trigger is fast and efficient. Finally, all Deerstalker Rifles are factory pre-drilled and tapped for an optional Lyman 57 Receiver Sight for the most serious target shooter or hunter.

Barrel and Sight Group

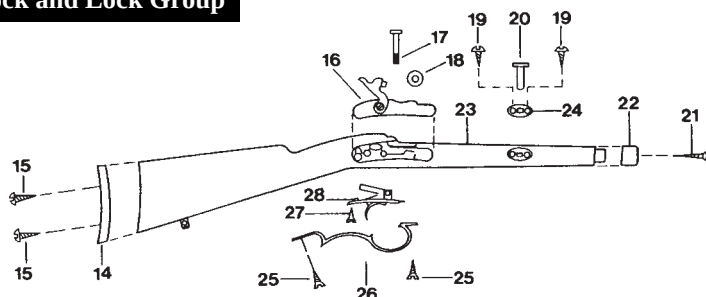


Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
1a	6030120	Cleaning Jag (.50 cal.)	8e	6993173	L. H. Barrel (.50 cal.)
1b	6030101	Cleaning Jag (.54 cal.)	8f	6993174	L. H. Barrel (.54 cal.)
2	6993100	Tang	8g	6993178	L. H. Barrel (.50 cal.) Flint
*3	NA	Breech Plug	9	3090118	Front Sight (37 ML)
*3a	NA	Breech Plug (Flint)	10	6030138	Barrel Lug (factory installed)
3b	6030176	Touch Hole Liner (Flint)	11	6993106	Barrel Rib & Thimbles
4	6030123	Cleanout Plug	12	6030134	Rib Screw
5	6030124	Nipple 6 x .75mm	12a	6030135	Thimble Screws
6	6030125	Tang Screw	13	6010034	Delrin Ramrod 25" (10-32 thread)
7	3090117	Folding Leaf Sight (16AML)	14	6993123	Plug Screw
8a	6993103	Barrel (.50 cal.)	15	6030263	Screw
8b	6993104	Barrel (.54 cal.)	16	6993102	Ramrod Clip Spring
8c	6993095	Barrel (.50 cal.) Flint			
8d	6993096	Barrel (.54 cal.) Flint			

*Note: Breechplugs and barrels not sold separately, only as factory-assembled units.

Stock and Lock Group



Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
14	6993107	Butt Plate	21	6993113	Forend Cap Screw
15	6993108	Butt Plate Screws	22	6993114	Forend Cap
16	6030119	Lock Assembly	23	6993115	Stock
16a	6030180	Lock Assembly (Flint)	23a	6993172	L.H. Stock
16b	6993170	L.H. Lock Assembly	24	6993116	Escutcheon
16c	6993171	L.H. Lock Assembly (Flint)	25	6030147	Trigger Guard Screw
17	6993109	Lock Mounting Screw	26	6993117	Trigger Guard
18	6993110	Lock Screw Bushing	27	6030149	Trigger Assy. Mount Screw
19	6030141	Escutcheon Screw	28	6030226	Trigger Assembly
20	6993112	Wedge*			

***Note:** The wedge is installed from the right to the left. This is true for right or left-hand rifles. Sights are also installed from the right to the left. Sights are removed from the left to the right.

Note: Trigger assembly for Deerstalker same as Trade Rifle (shown on page 25.) Lock assemblies for Lyman rifles shown on page 30.

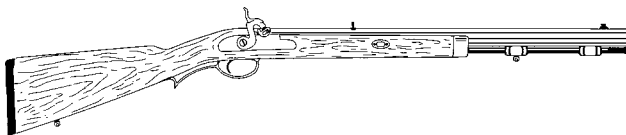
Barrel Specifications

	Bore	Groove	Twist	Suggested Ball Dia.
Plains Pistol .50	.501"	.520"	1/30"	.490"/.495"
Plains Pistol .54	.541"	.560"	1/30"	.530"/.535"
Great Plains Rifle .50	.502"	.520"	1/60"	.490"/.495"
Great Plains Rifle .54	.542"	.558"	1/60"	.530"/.535"
Great Plains Hunter .50	.502"	.510"	1/32"	*
Great Plains Hunter .54	.542"	.550"	1/32"	*
Trade Rifle .50	.502"	.520"	1/48"	.490"/.495"
Trade Rifle .54	.542"	.558"	1/48"	.530"/.535"
Deerstalker .50	.502"	.520"	1/48"	.490"/.495"
Deerstalker .54	.542"	.558"	1/48"	.530"/.535"
Deerstalker Stainless Steel .50	.502"	.510"	1/48"	*
Deerstalker Stainless Steel .54	.542"	.550"	1/48"	*

***Note:** Recommend conical or sabots for this model.

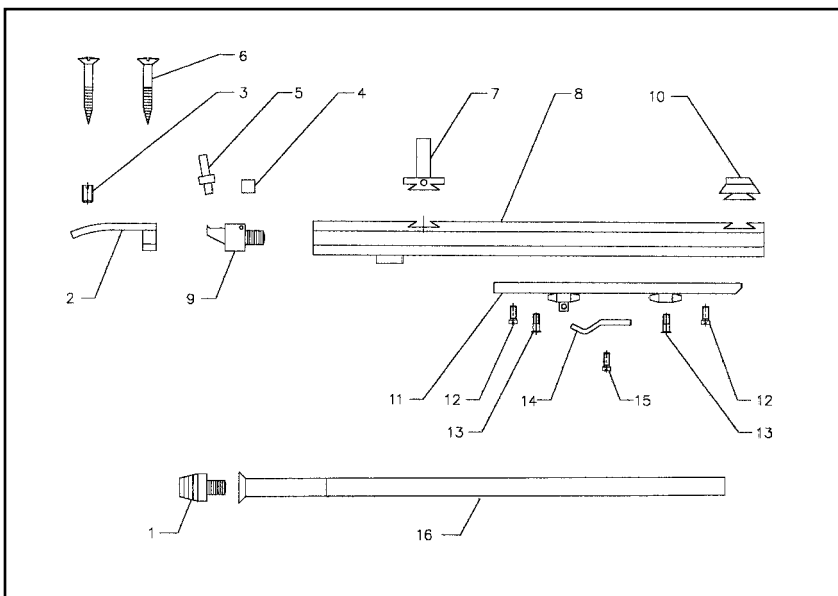
Note: These are nominal specifications for general information only. The actual dimensions of a given gun may vary several thousandths of an inch. It is often necessary to experiment with several ball diameters and patch thicknesses to find the one best for your application. If you have any questions concerning your gun, please note the serial number of your gun and call/write Lyman Customer Service for verification. All barrels are 15/16" across the flats.

DEERSTALKER STAINLESS



The Lyman Deerstalker Stainless model has all the features of the standard blued model, but is made in corrosion resistant stainless steel. All major metal parts such as the barrel, trigger guard, lock assembly, escutcheons, and wedge are stainless steel for the greatest protection against black powder fouling and weather. The Deerstalker stainless models uses a 1 in 32" twist barrel for shooting conicals and sabots. Stainless parts have brushed finish to prevent glare.

Barrel and Sight Group - Stainless

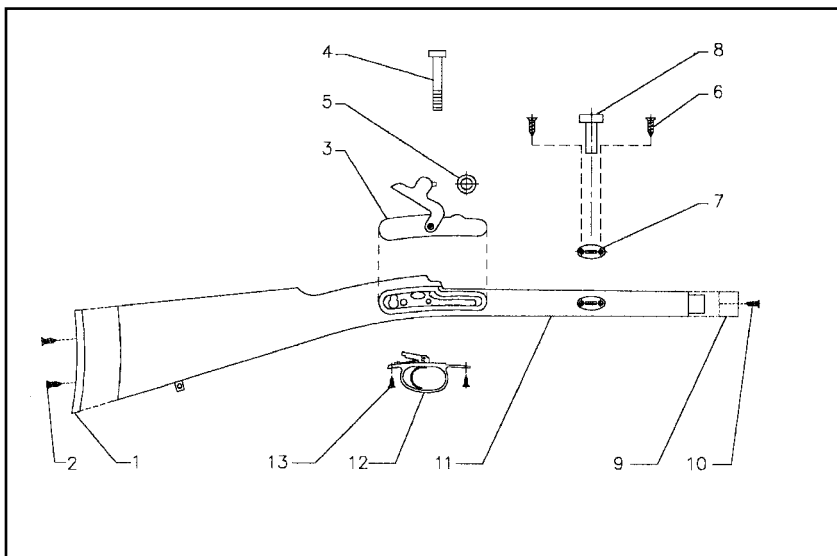


Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
1a	6030120	Cleaning Jag (.50 cal)	8b	6993304	Barrel (.54 cal)
1b	6030101	Cleaning Jag (.54 cal)	9*	N/A	Breech Plug
2	6993300	Tang	10	3090118	Front Sight (37 ML)
3	6993123	Plug Screw	11	6993306	Barrel Rib & Thimble
4	6993301	Cleanout Plug	12	6993307	Rib Screws
5	6030124	Nipple 6 x .75mm	13	6993308	Thimble Screws
6	6993302	Tang Screw	14	6993102	Ramrod Clip Spring
7	3090117	Folding Leaf Sight (16 AML)	15	6993309	Spring Screw
8a	6993303	Barrel (.50 cal)	16	6010034	Delrin Ramrod 25" (10-32 thread)

*Note: Breechplugs and barrels not sold separately, only as factory-assembled units.

Stock and Lock Group



Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
1	6993107	Butt Plate	8	6993314	Wedge
2	6993108	Butt Plate Screws	9	6993315	Forend Cap
3	6993310	Lock Assembly	10	6993113	Forend Cap Screw
4	6993311	Lock Mounting Screw	11	6993316	Stock
5	6993312	Lock Screw Bushing	12	6993331	Trigger Assembly
6	6993313	Escutcheon Screw	13	6993318	Trigger Guard Screw
7	6993317	Escutcheon			

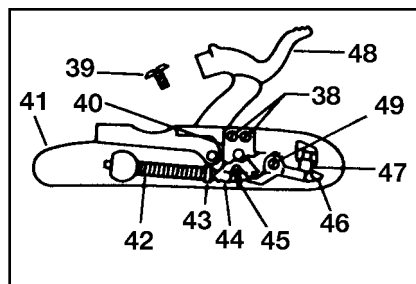
LOCK ASSEMBLIES

Percussion Lock Assembly

(For Lyman Great Plains, Trade and Deerstalker Percussion Models)

The percussion lock on your Black Powder Rifle is a near-perfect blend of both old and new. The exterior is finely finished and color case-hardened as were the guns of 150 years ago.

Inside, the lock is a redesigned system featuring a coil mainspring (42) instead of the traditional leaf spring. This is a much more durable mainspring, one that is not prone to the breakage problems encountered with the flat leaf springs.



Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
38	6030151	Bridle Screws	44a	6993189	L.H. Tumbler
39	6030152	Hammer Screw	45	6030158	Fly
40	6030153	Bridle	46	6030159	Sear
41	6030154	Lock Plate	46a	6993188	L.H. Sear
41a	6993186	L.H. Lock Plate	47	6030160	Sear Plunger & Spring
42	6030155	Main Spring	48	6030161	Hammer
43	6030156	Main Spring Plunger	48a	6993184	L.H. Hammer
44	6030157	Tumbler	49	6011127	Sear Screw

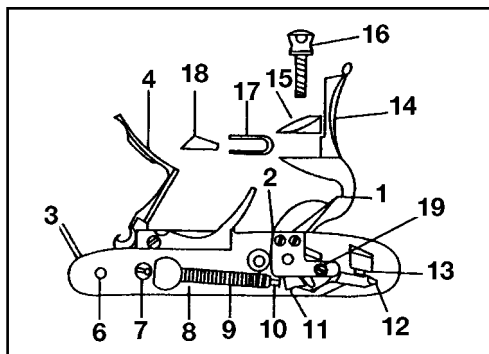
Note: Pull hammer to full cock before removing lock assembly from the stock. Wood damage will result if this is not done.

Percussion Lock Assembly—Stainless Steel

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
38	6993320	Bridle Screw	44	6993325	Tumbler
39	6993321	Hammer Screw	45	6030158	Fly
40	6993322	Bridle	46	6993326	Sear
41	6993323	Lock Plate	47	6993327	Sear Plunger & Spring
42	6030155	Main Spring	48	6993328	Hammer
43	6993324	Main Spring Plunger	49	6993329	Sear Screw

Flintlock Lock Assembly

For Great Plains, Trade and
Deerstalker Flint Models



Components

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
1	6030151	Bridle Screw	10a	6993189	L.H. Tumbler
2	6030153	Bridle	11	6030158	Fly
3	6030181	Lock Plate	12	6030159	Sear
3a	6993187	L.H. Lock Plate	12a	6993188	L.H. Sear
4	6030182	Frizzen	13	6030160	Sear Plunger & Spring
5	6030183	Frizzen Spring*	14	6030186	Hammer
5a	6993191	L.H. Frizzen Spring*	14a	6993185	L.H. Hammer
6	6030184	Frizzen Spring Screw	15	6030187	Hammer Jaw
7	6030185	Frizzen Screw	16	6030188	Jaw Screw
8	6030155	Main Spring	17	—	Leather**
9	6030156	Main Spring Plunger	18	—	Flint**
10	6030157	Tumbler	19	6011127	Sear Screw

Note: Pull hammer to full cock before removing lock assembly from the stock. Wood damage will result if this is not done.

* Not shown in illustration

**Not available from Lyman

LYMAN PLAINS PISTOL

Lyman's Plains Pistol recreates the trapper's pistol of the mid-1800's while incorporating the best of modern steels and technology.

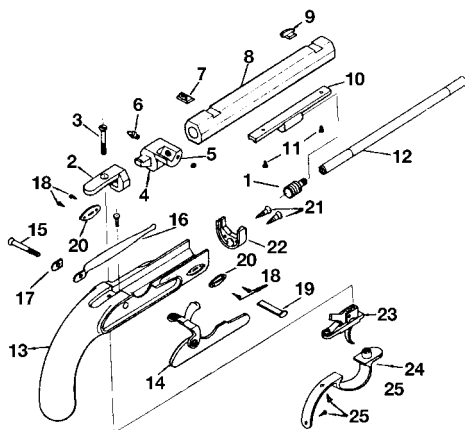
All steel parts on the finished gun are polished and blued - except for the belt hook. The percussion lock is hardened internally with a color-case hardened lockplate and hammer on both the kit and finished gun.

Your Plains Pistol is designed to fire a tightly patched roundball accurately at various charge levels. Do not shoot conical bullets, such as the "Maxi" or Minie ball. The conical bullets are very heavy, compared to a patched round-ball, and are very likely to slip towards the muzzle if the loaded pistol is carried on the belt. The resultant space between bullet and powder could produce a bulged or burst barrel under certain conditions.

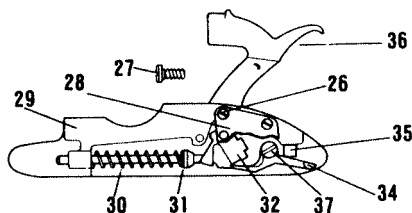
Stock and Lock Group

Dwg. Pc. Mk.	Part Number	Description
1	6030120	Cleaning Jag (.50 cal)
1a	6030101	Cleaning Jag (.54 cal)
2	6011102	Tang-Pl. Pistol
3	6011103	Tang Screw-Pl. Pistol
4	6030122	Breech Plug
5	6030123	Cleanout Plug
6	6030124	Nipple 6 x .75mm
7	6011104	Rear Sight-Pl. Pistol
8	6011106	Barrel (.50) Blued; Pl. Pistol
8a	6011107	Barrel (.54) Blued; Pl. Pistol
9	6011108	Front Sight-Pl. Pistol
10	6011109	Barrel Rib w/attached ferrule-Pl. Pistol
11	6011110	Barrel Rib Screw-Pl. Pistol
12	6011111	Ramrod-Pl. Pistol (10-32 thread)
13	6011112	Stock (finished)-Pl. Pistol
13a	6011113	Stock (kit)-Pl. Pistol
14	6011114	Lock Assembly-Pl. Pistol
15	6011115	Lock Mounting Screw Pl. Pistol
16	6011116	Belt Hook-Pl. Pistol
17	6011117	Lock Screw Bushing
18	6011118	Escutcheon Screw-Pl. Pistol
19	6011119	Wedge-Pl. Pistol*
20	6011120	Escutcheon-Pl. Pistol
21	6011121	Forend Cap Screw-Pl. Pistol
22	6011122	Forend Cap-Pl. Pistol
23	6011123	Trigger Assembly-Pl. Pistol
24	6011128	Trigger Guard-Pl. Pistol
25	6011129	Trigger Guard Screw-Pl. Pistol

Note: Breech plugs and barrels not sold separately, only as factory-assembled units.



Shooting Caution: Do not carry your loaded Plains Pistol with a percussion cap on the nipple. This is just as unsafe as carrying a single-action revolver with a primed chamber under the hammer - even if the hammer is on the safety notch.



***Note:** The wedge is installed from the right to the left. Sights are also installed from the right to the left. Sights are removed from the left to the right.

Percussion Lock Assembly

Dwg. Pc. Mk.	Part Number	Description	Dwg. Pc. Mk.	Part Number	Description
26	6030151	Bridle Screws*	32	6030157	Tumbler*
27	6030152	Hammer Screw*	34	6011137	Sear
28	6011124	Bridle-Pl. Pistol	35	6030160	Sear Plunger & Spring*
29	6011125	Lock Plate-Pl. Pistol	36	6011126	Hammer
30	6030155	Main Spring*	37	6011127	Sear Screw*
31	6030156	Main Spring Plunger*			

*Interchangeable with lock parts from the Great Plains Rifle, Deerstalker and Trade Rifle.

Instructions for Lyman Assembly Kits

INTRODUCTION

The materials provided in Lyman Kits have been selected for their overall quality and durability. Proper assembly will enable you to create a muzzle-loading firearm having the quality lines of an expensive custom piece.

Read these instructions thoroughly before you actually begin assembly. There are several critical steps - and others that will save considerable time within the instructions. Reading the instructions will give you a better understanding of the task and allow you to mentally sequence the events before beginning work.

TOOLS REQUIRED

We recommend that you obtain a copy of Brownells Gunsmith Tool Catalog. You will find this book to be a handy tool reference and a good source for the material you cannot find locally.

Brownells Inc., 200 South Front Street, Montezuma, Iowa 50171

Carving Tools—The wood work required to complete this kit could be done with ordinary hobby knives, but a set of wood carving tools will simplify any carving required.

Rasps—You will need a straight rasp for rough shaping the exterior of the stock to final dimensions. The "Surform" tools produced by Stanley will do a satisfactory job.

Sand Paper—Grades 80 through 320.

Files— (1) 10 or 12 inch mill file
(2) 1/4 inch wide pillar file
(3) 1/4 inch three square file

Electric Drill and Bits—

- (1) 3/32 inch
- (2) 1/16 inch
- (3) 1/8 inch

SPECIAL INSTRUCTIONS - INLETTING

The stock of your Lyman kit is, at least, 95% inletted. You will find that most, if not all, the major parts will fit properly with no additional inletting required. However, we have chosen to be very meticulous and present the inletting of each part with greater detail and emphasis than is likely to be required.

Throughout these instructions you will be instructed to "blacken" the part prior to inletting, then to look for the black transfer marks, indicating where excess material is to be removed. These instructions refer to a technique where a part is coated with a transfer agent (such as soot, Prussian Blue, lipstick or similar substance) then inserted into the semi-inletted stock and lightly tapped into place. When the part is removed, the transfer agent will remain on the stock showing where wood is to be removed or *the fit is perfect*. If you have never inletted a stock before, it is important for you to realize the presence of a black transfer mark does not automatically indicate removal of material.

NOTE: CONSULT THE PARTS DIAGRAM IN THIS GUIDE AS NEEDED.

Example: Assume that you are inletting the lock assembly. After you remove the lock for the first time you will note the black transfer marks in the cavity. Little black will be apparent around the edges of the lock. Black marks will be located within the cavity showing where wood is to be removed to allow the working parts of the lock to fit. You will continue to coat the part with transfer agent, reinsert it into the cavity, continue inletting gradually dropping the lock into place. As the lock is lowered into position the edge of the lock plate will come into contact with the stock. At this time you must proceed very slowly. Wood is actually shaved from the cavity where the edge of the lock plate meets the stock. When the lock plate is properly inletted, light transfer marks will be apparent around the edges of the cavity. If these light transfer marks were to be removed you would create gaps between the edge of the lock plate and the surface of the stock, a condition that is not desirable.

There are two simple ways to obtain a suitable transfer agent.

One is to coat the part with soot from a smoking candle. The smoke from the candle flame is played on the part. This technique is very effective when fitting metal to metal. Add a few drops of oil at the wick base if your candle does not smoke enough. The second way to obtain a transfer agent is to purchase a bottle of "inletting black" from a gunsmith supply house.

KIT ASSEMBLY INSTRUCTIONS: GREAT PLAINS RIFLE AND PLAINS PISTOL

The first step in assembly is with the barrel group. The barrel is to be partially finished first so that it can be readily inletted into the stock.

1. **Draw Filing the Barrel**—Draw filing is used primarily to shave away the tool marks left on the barrel by the precision milling operation; secondarily to dress the patent breech to the barrel.

During draw filing, the file is held such that it makes a right angle with the axis of the barrel (refer to Figure 1). Holding the file with both hands, it is lightly drawn down the entire length of the barrel, shaving metal away as it travels.

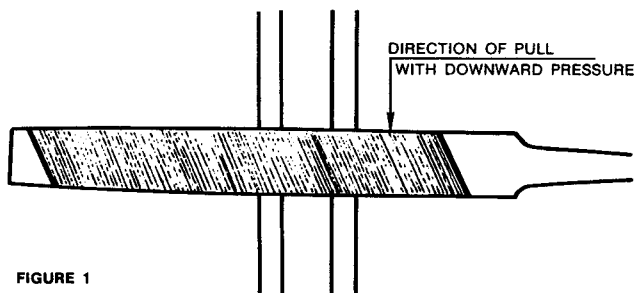


FIGURE 1

Begin by securing the barrel in a padded vise and start draw filing the entire barrel, one flat at a time. Start at the muzzle and draw the file towards you, making sure that the file is held flat against the barrel. Do not allow the file to rock side to side during the draw, as this will cause rounded edges.

Continue filing, one flat at a time, until each flat of the barrel is completely free of milling tool marks, and the breech plug is flush with the barrel flats. Take your time.

When the draw file has been completed, lightly oil the entire barrel to prevent rust. The final polishing of the barrel will be done after all inletting has been completed.

2. **Fitting the Tang to the Breech Plug**—The tang and the lug on the breech-plug may require hand-fitting to provide the proper fit when the barrel is hooked into position. The fit described below will assure a rigid barrel/stock assembly that will promote excellent accuracy in the finished rifle or pistol.

Caution: This step is often unnecessary as it is factory fitted.

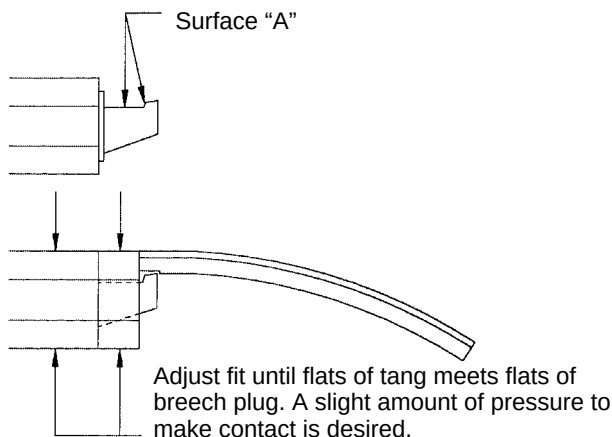


FIGURE 2

You will note that when the tang is first installed onto the breech plug it may not lie flat, in contact with the rear of the breech plug.

The idea now is to carefully file away the surface ("A") of the breech plug lug until the tang mounts flush with the plug with a small amount of pressure applied. Over-cutting of the top surface will cause the tang to fit loosely and may affect accuracy.

Blacken the entire surface of the projecting lug on the breech plug. Hook the tang onto the lug. Remove the tang and examine the upper surface of the lug. White marks (soot rubbed away) will indicate where excess metal is to be filed away. Carefully file away excess metal, reblacken the lug and hook the tang back into position. Repeat the filing and fitting process until the top flat of the tang is parallel with the top flat of the barrel.

3. **Inletting the Stock**—The stock of your Lyman muzzleloader is a very delicate piece of wood, and requires considerable care when metal parts are fitted to it. Pressure incorrectly applied when inletting could well result in a cracked stock.

The areas of the tang, barrel breech and the lock are particularly delicate. Large amounts of wood have been removed from these areas to accommodate hardware. These areas are very likely to be damaged if improper care is taken during the inletting process. The following instructions describe how to proceed during each critical step. With reasonable care, good results will be obtained.

4. **Inletting of the Lock Screw Bushing or Plains Pistol Belt Hook**—The lockscrew bushing should be inletted flush with the stock surface. Blacken the underside of the bushing and press it into its stock cavity. Remove the bushing and carefully cut away excess wood within the cavity. Continue the process until the bushing is completely inletted and bottoms in the cavity.

NOTE: Should the bushing become stuck in position before inletting is complete, it can be easily removed by inserting the lock screw into the screw hole from the lock cavity side of the stock, and carefully tapping out the bushing.

5. **Inletting the Lock Assembly**—First, draw the hammer back to full cock. Apply transfer agent to plate edges. Position the lock over its cavity in the stock. Insert the lock mounting screw and slowly tighten it, drawing the lock down into position. Draw down only until resistance is met. Remove the lock and examine the cavity for black transfer marks. Carefully cut away excess wood.

NOTE: If you remove too much wood from the inner surface where the stock and the edge of the lock plate meet, unsightly gaps will result. Remove only small amounts of wood at a time. Do not over-tighten the lock screw when drawing the lock into position. If the cavity has not been fully inletted, the lock will act as a wedge and a cracked stock will result. Continue the inletting process until the lock has been inletted to a point where the surface of the lock plate is just above the surface of the stock. Final inletting will take place later.

6. **Inletting the Tang and Barrel Assembly**—Remove the forend cap from the stock. Install the lock.

Hook the tang on the breech plug and set the entire tang/ barrel assembly into the stock. Carefully note the position of the bolster (on the breech plug) with regard to the circular cutout on the lock. It should align closely.

Inletting of the tang/barrel assembly must allow the bolster to fit into the circular cutout on the lock when inletting is completed.

If further inletting is needed, blacken the underside of the tang and set it into position, noting with a pencil mark. Carefully tap into place, then remove and cut away excess wood. Continue this process until the tang has been inletted to 90% of its depth in the stock. During the course of this inletting, periodically install the barrel on the tang to check for bolster alignment with the lock.

Once the tang has been inletted to near full depth, proceed by inletting the barrel and tang as an assembly. Blacken the undersides of both the barrel and tang. Cut away any excess wood from both the tang area and the barrel channel until the assembly is fully inletted, and the bolster makes contact with the circular lock plate cutout. When this contact has been made, remove the lock and continue inletting to full depth. The barrel wedge(s) can be inserted into the barrel tenon(s). A slight amount of pressure should be required to insert the wedge(s). Note that on the Great Plains Rifle the longer wedge should be installed closest to breech.

7. **Final Inletting of the Lock and Barrel Assembly**—Great Plains: Set the tang and barrel into position, note the location of the two tang screws. They should line up with the holes in the tang. When complete, mount the tang in position. Hook the barrel to the tang and install. Do not force the barrel down. You may find that additional inletting behind the breech plug is required to clear the breech hook, allowing the barrel to pivot.

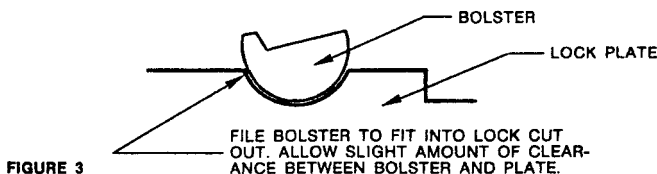


FIGURE 3

Plains Pistol: Set the tang and barrel into position and, when complete, mount the tang in position. The single tang screw goes through a pre-drilled stock hole and anchors in a threaded hole in the top of the trigger plate. Make sure the screw aligns properly so the tang screw threads won't be stripped. Hook the barrel to the tang and install. Do not force the barrel down. You may find that additional inletting behind the breech plug is required to clear the breech hook, allowing the barrel to pivot.

NOTE: Gap between lower barrel flat and bottom forend channel should not exceed 1/16".

At this stage you should complete inletting of the lock to its full depth so the inside shoulder of the lock makes solid contact with the side flat of the barrel, and the bolster of the breech plug fits properly into the circular cutout of the lock. Install the lock assembly. Blacken the underside of the bolster and reinsert the barrel assembly in the stock. The barrel may not go back into its fully inletted position.

If not, the interference will be caused by the bolster being slightly out of position with the circular cutout of the lock (refer to figure 3). Remove the barrel and examine the underside of the bolster for interference marks. Carefully file away excess metal on the bolster, using a rotation motion as you file. Repeat the blackening and trial fit process until the barrel has been returned to its fully inletted position. Note: Proper fit is achieved when there is a slight clearance between the bolster and the circular cutout. At final assembly the lock must be able to be removed with the barrel in position.

Flintlock Note: The lock must contact flat of barrel to prevent priming powder from collecting inside lock. If ignited, this powder will explode, ruining the rifle and probably causing injury.

Install the barrel using the barrel wedge to hold it in place. Remove the lock assembly and blacken the underside. Continue the inletting of the lock until the inside shoulder of the lock is in full contact with the side flat of the barrel. When the lock has been fully inletted, carefully pull the hammer back to check for interference with internal working parts. The lock should cock freely. If resistance is felt, examine the lock cavity to ensure that all rotating parts have clearance.

8. Inletting the Trigger Assembly—Blacken the underside of the trigger assembly. Insert the assembly to the rear of the trigger cavity. Remove the trigger assembly and cut away excess wood. Continue the inletting process until the trigger plate has been inletted slightly below the surface of the stock.

Locate the position of the trigger assembly mount screw. On the Great Plains Rifle use the 1/16 inch drill to drill the pilot hole. Install the trigger assembly.

FUNCTION TEST: Make certain that the hammer is in the down position. Check triggers for freedom of movement.

Great Plains Rifle—Set the rear trigger and release the set trigger by pulling on the front trigger. If both triggers operate freely, you have adequate clearance. If not, remove the trigger assembly, examine the cavity for black transfer marks and cut away interfering wood.

Plains Pistol—Secure the trigger assembly by installing and tightening the tang screw.

9. Inletting the Trigger Guard—Great Plains: Use a mill file and carefully remove any burrs from around the bottom edges of the two flats of the trigger guard. The outer edges should be completely finished before inletting. The exterior surface of the trigger guard can be finished later. Blacken the underside of the two flats of the guard, and insert the guard into its cavity. Remove and cut away excess wood. Continue the inletting until the trigger guard has been inletted flush with the surface of the stock. Locate the position for the two pilot holes and, using the 3/32 drill, drill the two pilot holes for the trigger guard screws. Install the trigger guard.

Plains Pistol: Your Plains Pistol Kit has the trigger guard factory-installed. No holes need be drilled by the builder and little, if any, inletting will be necessary. However, some fitting of the trigger guard over the trigger assembly may be necessary to permit the trigger guard to return to its original position, flush with rifle stock.

If such fitting is necessary, spot and file the underside of the brass trigger guard as needed.

The trigger guard should be left on the stock during all stages of wood shaping and finishing. However, the correct fit is flush with the finished stock. After the stock has received its final sanding, the trigger guard can be removed for final polish and later installation on the stained and finished stock.

- 10. Inletting the Butt Plate (Rifles Only) and Forend Cap**—Both the butt plate and nose cap have been factory-installed to protect the exposed ends of the stock. Additional fitting may be necessary for perfect fit.

Remove the butt plate and blacken the underside. Install. Then remove and cut away excess wood. Continue this process until no wood-to-metal gaps are apparent. Final fitting will take place when the stock is shaped. Note: In some instances, only a minor amount of metal prevents an excellent fit. Judicious filing and spotting often causes the butt plate to fit perfectly with little or no wood removal.

The forend cap is inletted in the same manner with an additional operation required. Once the forend cap has been fully inletted, install the barrel. Note any interference between the cap and barrel, and carefully file away excess cap metal. The cap should not make contact with the barrel, a 1/64 inch gap is desirable.

- 11. Inletting the Escutcheons**—Place the barrel in the stock. Each escutcheon is inletted separately using the barrel wedge as a locating guide.

Blacken the underside of an escutcheon plate. Place the plate in position over its cavity and insert the barrel wedge. Lightly tap the wedge down to hold the plate in position. Do not overdo this or the plate will be deformed. Check the plate for position and make sure the cavity is completely covered by the plate. Select a knife with a small, thin blade and carefully cut a line around the edge of the plate. Use only the point of the blade and position the knife so the cut is angled toward the center of the plate.

Remove the plate and, using the knife cut as a guide, cut away excess wood directly to the bottom of the cavity. Make certain the cuts stay slightly to the inside of the knife scribe mark. Repeat the process for the second plate. Pilot holes are not required for the escutcheon plate screws. Use the point of a knife or small nail to locate the center of the hole and install the screws.

- 12. Finishing the Barrel**—When the barrel has been completely inletted into the stock, work may proceed with final finishing of the barrel. The draw filing operation is now to be followed by successive passes of polishing with abrasive paper. First, select a medium-coarse grit emery paper, followed with successively finer grits up to 240 grit wet or dry paper. Wrap a piece of the grit around the file used to draw-file the barrel. The draw-polishing is accomplished in the same manner used to draw-file the barrel. Polish all flats, including the breech plug, until a satisfactory polish has been achieved.

- 13. Metal Coloring**—All steel fittings (except the lock and trigger assembly), including the barrel, of your Lyman muzzleloader require some form of metal finish. These may be polished with successively finer grades of emery paper or left as is prior to finishing depending on the builder's taste.

Traditionally, rifles and pistols of this type had the "iron mountings" browned. The kit builder may choose to cold blue these parts if he prefers a more modern type of finish. Metal finishing can be accomplished by dismounting all the steel parts from the stock and applying the metal finish according to the chemical manufacturer's instructions.

CAUTION: The ramrod thimbles on the Great Plains Rifle, and Plains Pistol are soldered to the barrel rib in the same fashion as many originals. Since some browning solutions require the use of heat, caution should be used to assure the part is not heated enough to loosen the soldered bond.

Hot browning requires approximately 212 to 260 degrees and, therefore, should present no problem if the kit builder is careful and tests the part temperature often.

14. **Sight Assembly**—Install the front sight and rear sight by drifting each into place using a brass or nylon punch so as not to damage them. These are installed right to left.

15. **Wood Finishing**—The stock has been machined in the traditional style of the period. However, sufficient wood has been left in most areas to allow individual styling of your kit.

When you have shaped the stock to a point slightly above the surfaces of any inletted metal parts, follow this operation with rough sanding using 80 grit paper. When sanding, follow the wood grain whenever possible. Final sanding should be done using grits 100 through 240, in succession to remove tool and sanding marks.

Sanding: When you have completely sanded the stock using 240 grit paper, carefully examine the stock surface. It will be completely free from scratch marks caused by rougher grits of paper. If all of these marks are not removed at this time, they will show through the finish and detract from the overall quality. When the stock has been completely sanded smooth, wet down the entire surface with a damp cloth and raise the grain of the wood.

Let the stock dry and once again lightly sand the stock surface with 240 grit paper. Sand off only the raised grain. Moisten the stock again and repeat the process, only this time follow the 240 grit paper with a light sanding using 320 grit paper. The stock is now ready for final finishing.

Staining: The European Walnut stock, as supplied, will finish to a nice warm brown color if finished without the use of a darkening stain. The wood of most old muzzleloading rifles and pistols was very dark in color. Select a walnut stain and follow the directions provided with the product. Stain the stock until you achieve the desired color. We recommend the use of a water stain such as produced by the Birchwood Casey Co. These stains can be found in most gun shops.

Sealing: The stock can be sealed by applying a commercial stock finishing solution such as linseed or Birchwood Casey's Tru-Oil. Follow the directions on the container.

IMPORTANT!

Be sure to read this Lyman User's Guide for Black Powder Products—and other literature—packed with this kit. You must read this material in order to use your Lyman muzzleloader in a safe, responsible manner.

If you decide to sell, trade or loan your Lyman muzzleloader, be sure the new operator receives the User's Guide. Free copies are available from Customer Service if the original booklet has been misplaced.

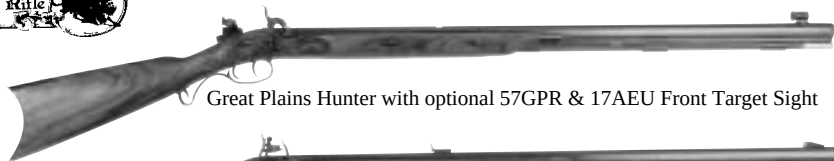
The Lyman Great Plains Rifle

A Tradition of Excellence

Lyman Great Plains Rifle

The rifle carried across the Great Plains by western pioneers and fur trappers was the culmination of percussion firearms development. This "Great Plains" rifle was designed and built by such famous makers as Hawken, Gemmer and Demick to the specifications of experienced backwoodsmen. Only the best and most reliable designs and finest workmanship were acceptable. Today, as in the 1800's, the experienced black powder shooter is looking for a very special rifle.

No other factory assembled rifle or kit offers the authentic style and design of Lyman's Great Plains Rifle. This classic muzzleloader offers such high quality features as a 32" barrel with 1 in 60" twist for patched ball and hunting loads, double set triggers, Hawken style percussion "snail" with clean out screw, separate ramrod entry thimble and nose cap, and reliable coil spring lock with correct lock plate. Available in .50 and .54 caliber flint or percussion. Factory assembled or kit form.



Great Plains Hunter with optional 57GPR & 17AEU Front Target Sight

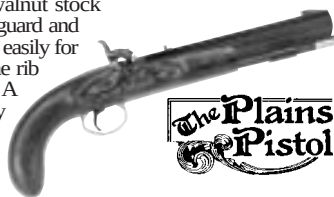


Great Plains Rifle Flintlock

Lyman Plains Pistol

Lyman Plains Pistol recreates the trapper's pistol of the mid-1800's while incorporating the best of modern steels and technology.

It's the perfect companion to a Lyman black powder rifle. This percussion pistol is loaded with quality features. The richly stained walnut stock complements blackened iron furniture, polished brass trigger guard and ramrod tips. The hooked patent breech takes down quickly and easily for cleaning. Just like the originals, the thimble is recessed into the rib and a detachable belt hook provides an alternative to a holster. A spring-loaded trigger and fast 1 in 30" twist make it amazingly accurate.



.50 Cal. Per (#6010608)

.54 Cal. Per (#6010609)

.50 Cal. Per "Kit" (#6010610)

.54 Cal. Per "Kit" (#6010611)

Great Plains Hunter

This is a special version of our Great Plains rifle with the hunter in mind. Called the "Great Plains Hunter", this new model features a fast, 1 in 32" shallow groove rifle barrel. It's ideal for shooting the many types of modern projectiles available to today's black powder hunter, such as Lyman's own 'Shocker' series of bullets and sabots. The Great Plains Hunter has all of the high quality features of our Classic Great Plains rifle. It is also also pre-drilled and tapped for the new 57 GPR receiver sight for the Great 0Plains rifle.

Finished Rifles

.50 Cal. Per#6031102

.54 Cal. Per#6031103

.50 Cal. Flint#6031105

.54 Cal. Flint#6031106

Left Hand Rifles#6031125

.54 Cal. Per#6031126

.50 Cal. Flint#6031137

.54 Cal. Flint#6031138

Great Plains Kits

.50 Cal. Per#6031111

.54 Cal. Per#6031112

.50 Cal. Flint ...#6031114

.54 Cal. Flint ...#6031115

Great Plains Hunter

50 Cal. Per#6031120

54 Cal. Per#6031121

50 Cal. Flint ...#6031148

54 Cal. Flint ...#6031149

50 Cal. Per(LH) #6031142

54 Cal. Per(LH) #6031143



New 32" Extra Great Plains Hunter Barrels

These barrels have 1-32" shallow groove rifling.* Ideal for shooting conicals and sabots. Includes fitted tang for easy change over. Available in:

50 Cal. 6030266 (Perc. only)

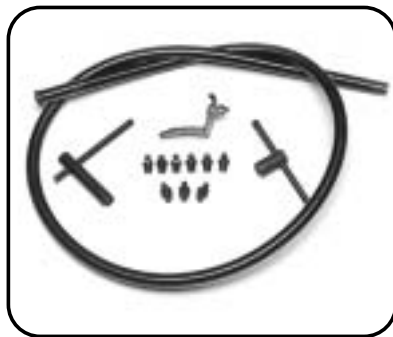
54 Cal. 6030267 (Perc. only)

*Easy Drop in for converting Classic Great Plains to Hunter Model.



Great Plains Rifle Left Hand

Lyman Black Powder Accessories	
Unbreakable Ramrod fits barrels up to 36"	6010030
Flint Frizzen better spark	6030182
Rifle Flints 2-pack	6030106
Rifle Nipple 3-pack (stainless)	6030080
Touch Hole Liner	6030176
Wedge Trade Rifle	6030142
Wedge Deerstalker	6993112
Wedge Great Plains	6030196



Upgrade Your Muzzleloader with Lyman Black Powder Sights

Lyman 57SML and 57GPR Receiver Sights

The most popular black powder receiver sight offers an immediate improvement in accuracy for the target shooter or hunter. Features 1/4 minute micrometer click adjustments for elevation and windage, quick release slide. 57SML fits perfectly on Lyman Deerstalker or Trade Rifle. Other models may require minor drilling and tapping depending on manufacturer. 57GPR fits Great Plains supplied with adapter.

Price: (4 oz.) 57SML(#3090114)

(4 oz.) 57GPR(#3090112)



57 SML
57 GPR

Lyman #17 Front Target Sight

The ideal companion for the 57SML receiver sight, the 17 comes complete with a set of 8 interchangeable inserts. The 17AML fits low to the barrel with a height of .494". The 17ATC fits rifles that use a tall vernier type rear sight. The 17ATC has a height of .852". All 17's are machined from steel and have a standard 3/8 dovetail. (Except 17AEU which has European Dovetail for Lyman Muzzleloaders).

Price: 17AML (Ht .494") (#3090115)

17ATC (Ht .852") (#3090116)

17AEU (Eur. Dovetail) (#3171074)



17 AML
17 ATC
17 AEU
(European
Dovetail)

16 and 37 Hunting Sights

Tired of the same old traditional blade and buckhorn sights found on most muzzleloaders? These quality Lyman hunting sights will make an old gun shoot straight and true. Both have special .360 dovetail cuts that fit most European imports. The 16AML folding leaf sight is fully adjustable for elevation. The 37ML white bead front sight stands out in low light conditions.

Price: #16AML (Ht .400-500) (#3090117)

Combination Set (#3090106)

#37ML (Ht .445) (#3090118)



16 AML
Rear
Sight

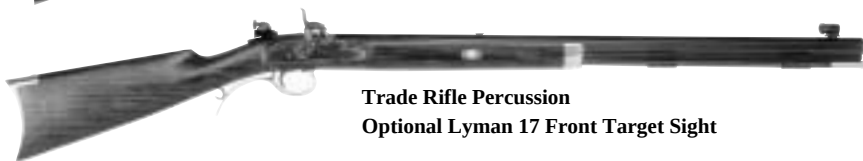


37 ML
Front
Sight

Deerstalker™ & Trade Rifles



Deerstalker Stainless



Trade Rifle Percussion

Optional Lyman 17 Front Target Sight

Deerstalker Rifle

Lyman's Deerstalker Rifle has quickly earned the reputation as one of America's most reliable, accurate and affordable hunting muzzleloaders. All Deerstalkers have "Guaranteed" performance features such as a quiet single trigger, reliable coil mainspring and high quality Lyman hunting sights. The 24" barrel with 1 in 48" twist is ideal for roundball or maxi hunting bullets. Parts are blackened to avoid glare and a black rubber recoil pad mounted on the Deerstalker's handsome walnut stock, makes for comfortable shooting in either .50 or .54 caliber.

Deerstalker Stainless

The new Deerstalker stainless model is as handsome as it is functional. This highly demanded rifle features true stainless steel on all of the major metal parts such as the barrel, trigger guard, lock assembly, escutcheons and wedge. The Deerstalker Stainless is available in percussion only and has a special 1 in 32" twist for shooting modern conicals.

Deerstalker Models

.50 Cal. Per	#6033140
.54 Cal. Per	#6033141
.50 Cal. Per Lefthand	#6033175
.54 Cal. Per Lefthand	#6033177
.50 Cal. Flint	#6033146
.54 Cal. Flint	#6033147
.50 Cal Flint LH	#6033171

Deerstalker Stainless

.50 Cal. Per	#6033185
.54 Cal. Per	#6033186

Lyman Trade Rifle

The Lyman Trade Rifle is patterned after the sturdy and functional guns developed for the early Indian fur trade. Designed by such companies as Henry and Leman, these original guns were much sought after by trappers, Indians and other rugged wilderness survivors.

.50 Cal. Per	#6032125
.50 Cal. Flint	#6032129
.54 Cal. Per	#6032126
.54 Cal. Flint	#6032130

LYMAN BLACK POWDER PROMOTIONS

Congratulations. The purchase of your new Lyman Black Powder Gun qualifies you to participate in our current Black Powder Promotional Program. You can now obtain selected Lyman Black Powder Accessories at special promotional prices. To order, simply select the items of your choice which are listed below and order using the order form on the reverse side of this page. Please make sure to use the correct part number which is indicated next to the product or in the Lyman catalog which comes with your gun. Any question, call toll free 1-800-22-LYMAN for assistance.

	Part #	Normal Retail	Special Promo Price
Lyman Black Powder Sights			
57 SML Rear Target Sight	3090114	69.95	54.95
57 GPR Rear Target Sight for Lyman Great Plains	3090112	69.95	54.95
66 MK Receiver Sight (for Knight MK & BK Rifles)	3662260	69.95	54.95
57 SMET Receiver Sight (for White Systems Rifles)	3572091	69.95	54.95
17 AML Front Target Sight	3090115	28.25	22.95
17 ATC Front Target Sight (for Thompson Center)	3090116	28.25	22.95
16 AML Fold Down Hunting Sight	3090117	13.25	9.95
37 ML Front Hunting Sight	3090118	9.50	7.50
Combo Set (16 AML & 37 ML)	3090106	17.95	14.50
Black Powder Casting Equipment			
Mini-Mag Casting Furnace 110V	2800200	54.00	40.95
Lead Casting Dipper	2867790	14.95	11.95
Lead Ingot Mould	2837794	16.95	12.95
Lead Pot	2867791	12.95	9.95
Casting Thermometer	2867793	37.50	28.95
Round Ball Mould Blocks (Single or double Cavity)	Part # in Catalog	61.25	45.95
Maxi Ball Mould Blocks		61.25	45.95
Minie Ball Mould Blocks		61.25	45.95
Other Black Powder Accessories			
Unbreakable Delrin Ramrod	6010030	8.25	6.95
Butch's Black Powder Bore Shine	02949	6.65	4.95

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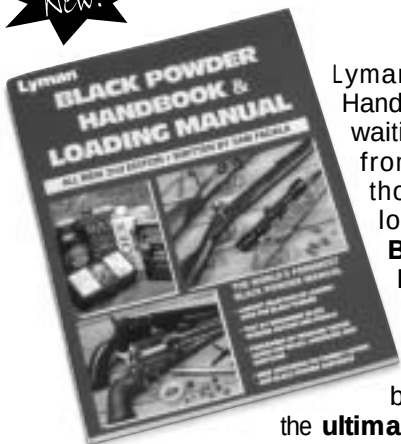
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Lyman Black Powder Handbook & Loading Manual



**Written by
Sam Fadala**



Lyman introduces the Black Powder Handbook that muzzleloaders have been waiting for. This manual is entirely new, from the ground up, and includes thousands of pressure tested loads using **Goex** and **Elephant Black Powders, Pyrodex** and **Pyrodex Pellets**. We feature a large assortment of bullets with down range velocities and energies for each load, all developed in our ballistics testing lab. This manual offers

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**It's the one manual every
black powder shooter should own!**

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www.lymanproducts.com**

LIMITED WARRANTY

Your Lyman product has been produced under rigid standards of manufacture and inspection. However, if your Lyman product is found to be defective in material or workmanship within 1 year from date of delivery to the first retail purchaser, we will repair or replace it without charge.

If you require service under this warranty, please complete the warranty repair notice form below and deliver your Lyman product, together with your completed notice form, postage or freight prepaid to our factory at the address below. Your Lyman product will be repaired or replaced and returned to you within 60 days of our receipt. In making any return of a Lyman product to the factory, be sure that it is packed with proper care to protect it from damage in transit.

We are sorry, but our warranty cannot apply to a defect which results from misuse, abuse, neglect, accident or improper care, or if your Lyman product has been altered or repaired by anyone other than our factory personnel.

Please complete and return to us the attached warranty registration card.

LYMAN PRODUCTS CORPORATION

475 Smith St., Middletown, CT 06457

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Dealer Name & Address _____

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475 Smith St., Middletown, CT 06457

Lyman Products Corporation Warranty Card

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